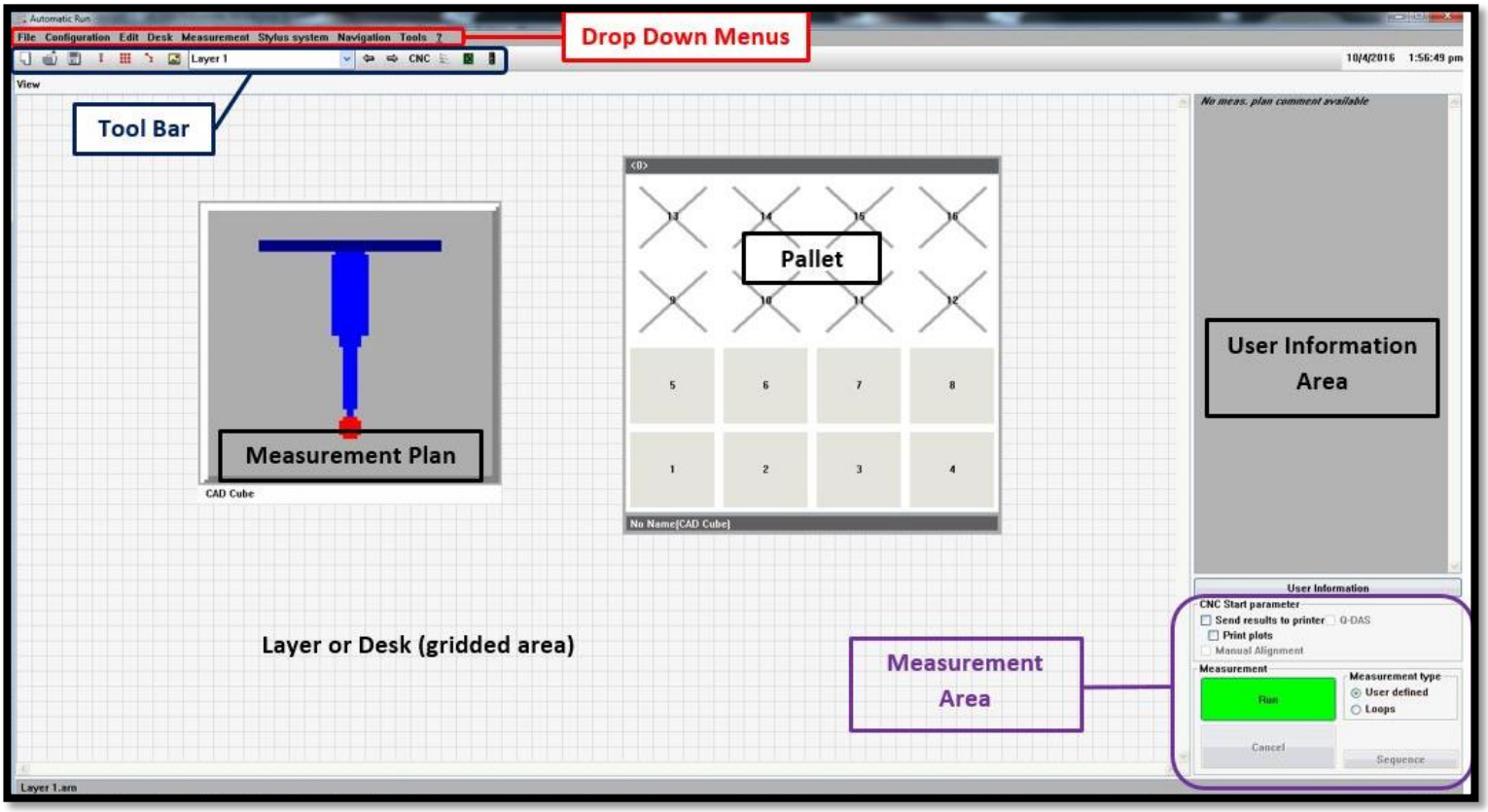
RG Loewenguth Co., Inc.

Calypso AutoRun

What is Autorun and why would you use it?

AutoRun is an **Icon Based Interface** that allows an operator to easily run programs at the touch of a button. A pictorial front screen enables programs to be executed without confusing run menus. In addition, it allows management to set up protection of approved Calypso programs by preventing unwanted modifications or saves. Finally, AutoRun allows easy creation of palletized part programs.

To get to AutoRun select **Plan dropdown/AutoRun…** the AutoRun screen opens. **Note:** **No Calypso programs can be open when selecting AutoRun**



***Drop Down Menus:** The Drop-Down Menus allows a variety of AutoRun tasks or even some Calypso tasks (like Stylus System changes) inside the AutoRun Screen.

***Tool Bar:** Allow the user to quickly insert items into the AutoRun Desk (layer).

***Layer or Desk:** This is the area where the Measurement Plan and/or Pallet is located, AutoRun can have multiple Desks (layers).

***User Information:** This is where the User Information is (see Creating User Information Guide for more info).

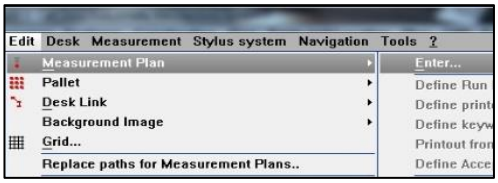
***Measurement Area:** This is the section that controls how the Measurement Plan or Pallet is run.

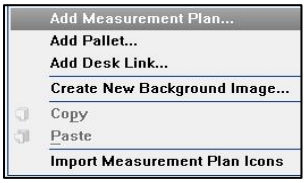
***Measurement Plan:** This is a Calypso program in Icon (*Button*) form.

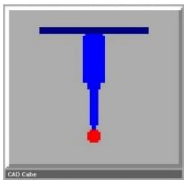
***Pallet:** This is a Calypso program in pallet form allowing you to run multiple parts at one time.

Adding a Measurement Plan

There are 3 ways to add a Measurement Plan: **Edit/Measurement Plan/Enter** from the Drop-Down Menus, right click on the layer and select **Add Measurement Plan** or select  **Enter New Measurement Plan.** When the next window opens, scroll to the program you want to use and select it just like you are opening a program in Calypso. After you select the program and press  a Measurement Plan Icon will be added to the layer you are currently on.

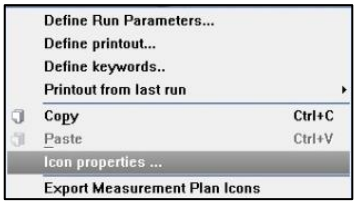


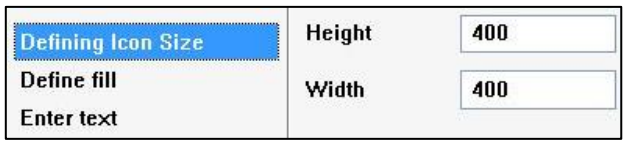




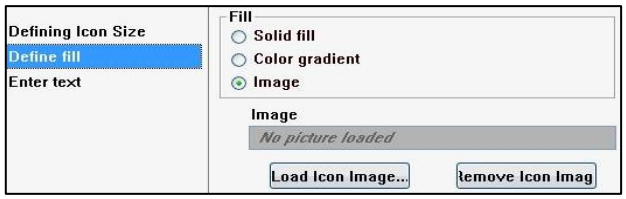
Default

Modifying Measurement Plan Icon: If you want you can modify the Icon, with the Measurement Plan Icon selected (gray) right click and select Icon Properties. This allows the modification a variety of the Icons properties.

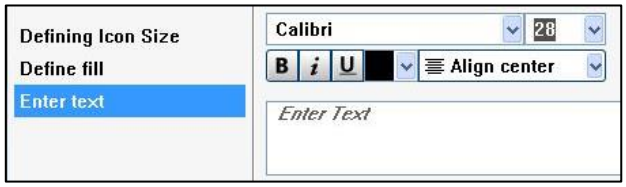




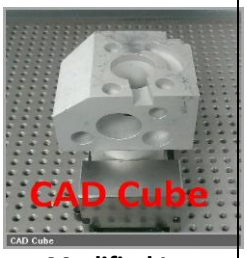
Size: You can change the size by entering values for the Height and Width. You can also change the size by left clicking the lower right corner of the icon and dragging the mouse.



Fill: You can customize the Icons fill making it a Solid Color, Color Gradient, or you can insert an image.



Text: You can enter text on top of the fill.
*Pressing Enter on the Keyboard **AFTER** the text moves the text up.*
*Pressing Enter on the Keyboard **BEFORE** the text moves the text down.*



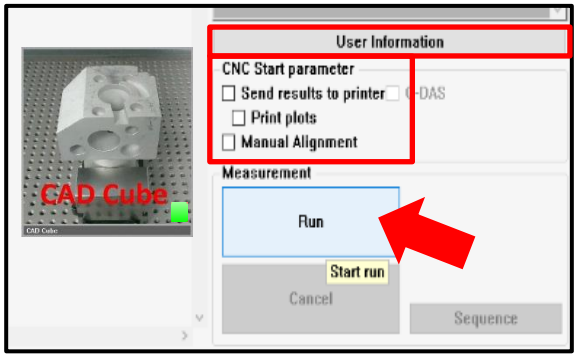
Modified Icon

The Modified Measurement Plan Icon has a picture of the actual part and the program name on it making it easier for the operator to choose the correct program.

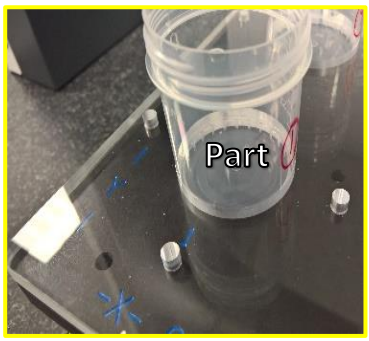
The Calibri font is nice to use because it is compact allowing for a larger font size than the default Arial font.

You can have as many Singular Part Measurement icons as you want to fit on a single screen or multiple layers. To run a measurement plan left click to highlight the Icon. Then left click on the "Run" button on the bottom right corner of the screen.

If you would like to perform a manual alignment or send Results to printer you can do so by checking the box in the CNC start Parameters section.

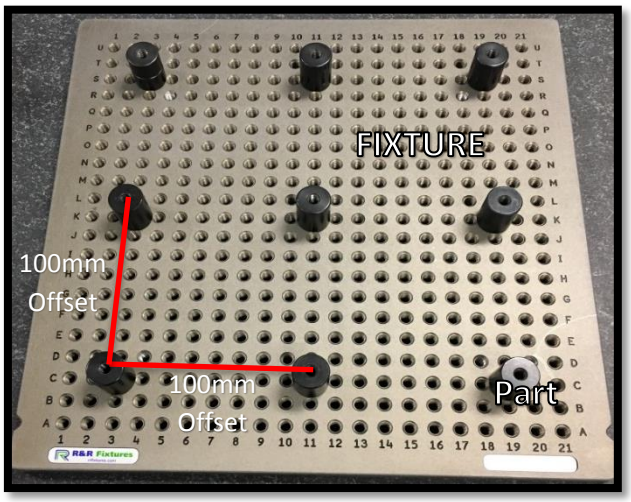


Palletizing a Measurement Plans



Preparation:

Before creating the AutoRun Pallet there are some Calypso programing decisions that need to be made. Most of the time a Pallet is used because the parts are on a fixture that holds multiples of the same part.



Here is an example of a Multi-Station Fixture, 9 locations (3 x 3). For this guide we will be using this fixture for the Fixture Program and Pallet Alignment. When you create a Pallet there are two alignment requirements:

Pallet Alignment: Part Alignment: a Pallet Alignment and a Part Alignment.

The Pallet Alignment: Aligns the location and orientation of each part on the fixture.

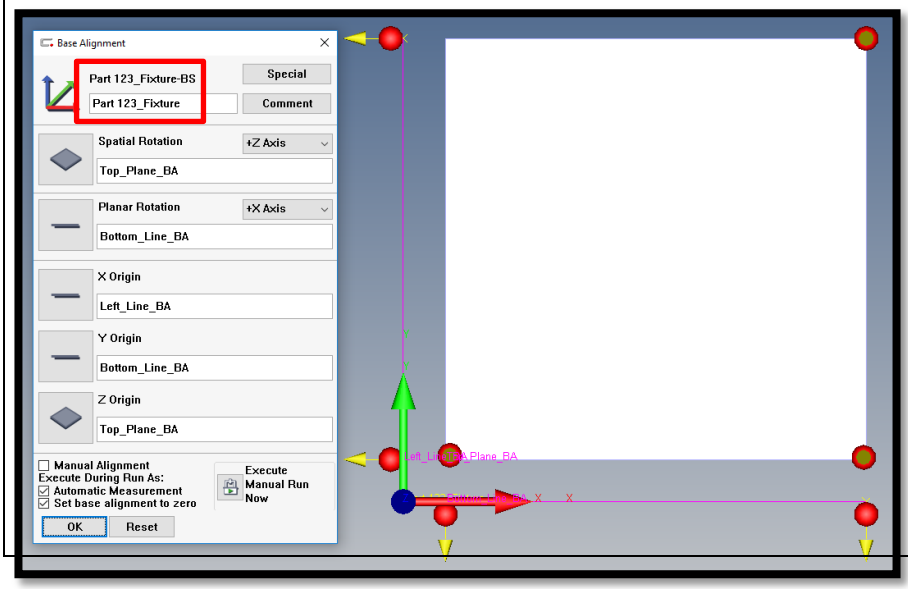
The Part Alignment: is the individual alignment of each part.

Example 1: Fixture program for the Pallet Alignment and a Part program for the Part Alignment.

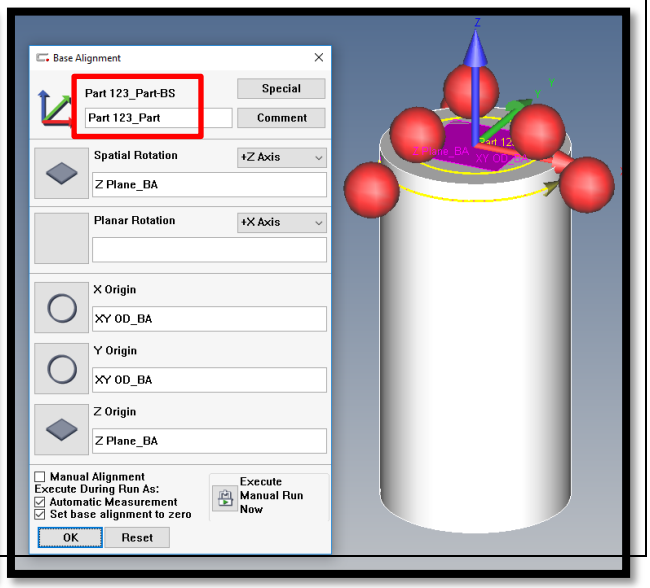
- This method is the easiest to program, but the downfall is if you move the fixture you must do a Manual Alignment on both the fixture and the part.

You can start this method with either the fixture program or the part program. I decided to go with a simple Base alignment for both Fixture and Part program.

Fixture Program Base Alignment



Part Program Base Alignment

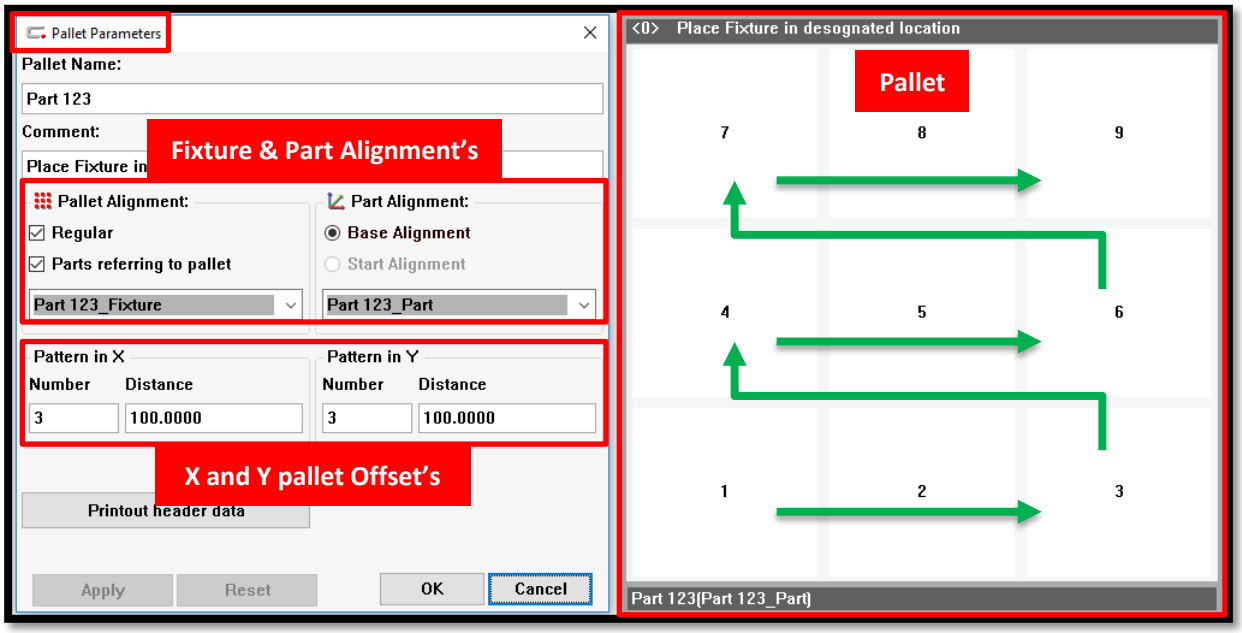


Adding the Pallet to Autorun for Example 1:

Once you are fully done with your part program, you can begin to setup your Autorun icons.

When you first select the pallet Icon in the toolbar  it asks you to select a program to palletize. Select your Part program. Once you select your Part program it will open a Pallet Parameters window.

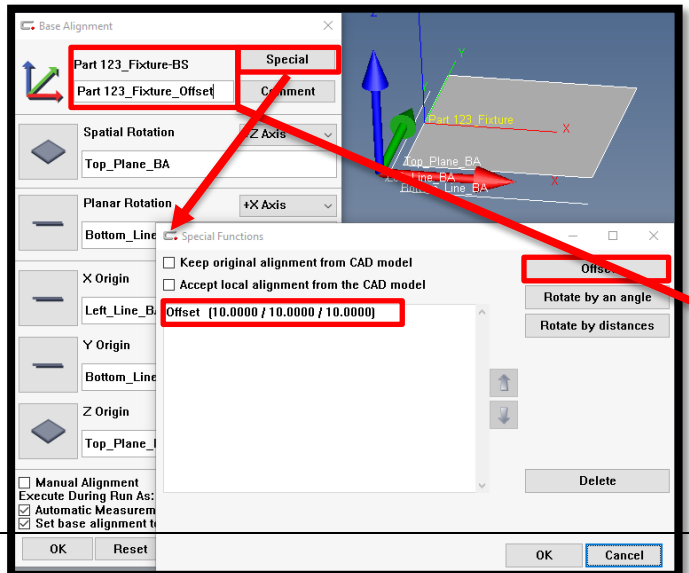
In this window you will need to select your Pallet Alignment and Part Alignment Base alignments. Then select you're the number of parts running in the X&Y direction as well as the X&Y offsets between each part. If you don't know your offsets off hand you can measure the same feature (In Calypso) from one part to the next and create a distance to obtain the offset.



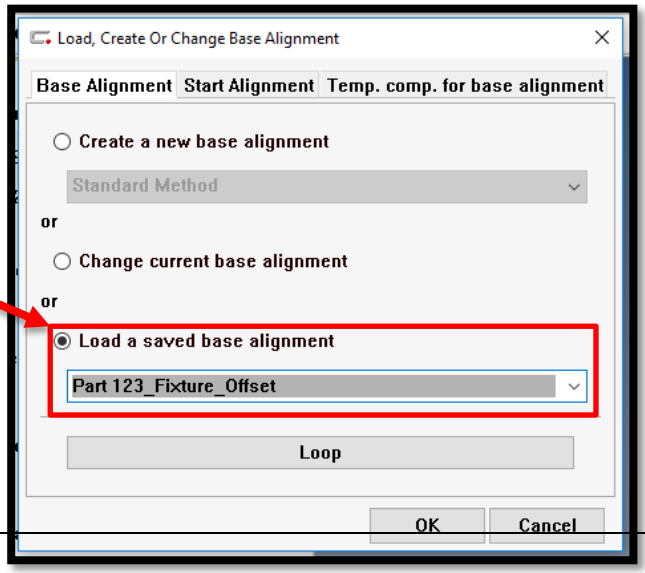
Example 2: Fixture program with an offset for the Pallet Alignment and a Part program with a loaded Base Alignment for the Part Alignment.

- We create a Fixture program with an alignment that is offset to the **First part Location**. Then the Base Alignment for the part program is loaded from the Fixture alignment.
- The benefit to this example is that if you have play in your fixture location, as long as the fixture program can run, the part program will update its alignment ever time.
- With that said if you move your fixture completely, you only must do a manual alignment for the fixture program at its new location.

Fixture Program Base Alignment

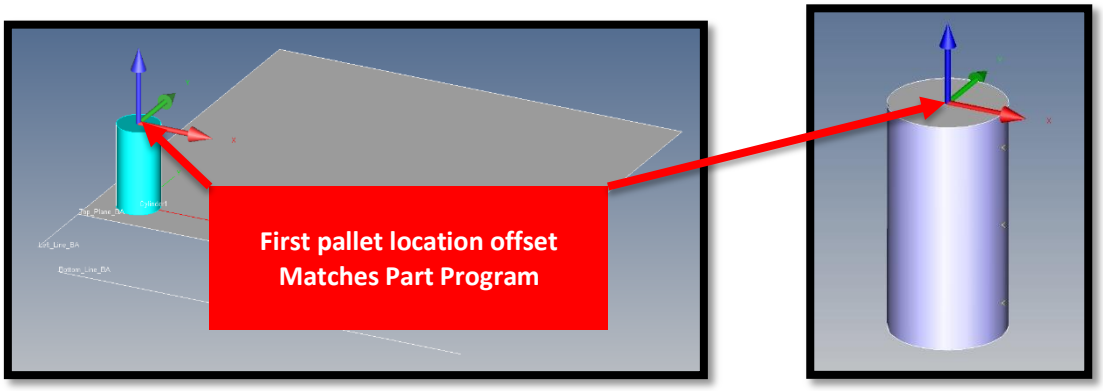


Part Program Base Alignment



Things to consider:

- Whats important about the fixture alignment and part alignment is that they have to be at the same location in each program.(Fixture and Part program)
- If you are working from a cad model you need to orientate the Trihedren using CAD model transformation, and place it on the model in to the features you want your secondary alignmennt.
- It is best practice for repeatable measuremnts to use multiple secondary alignments; One rough alignment and one robust alignemnt at least.



Creating the Part program with a loaded Alignment:

Walk Up and Measure Method:

To create the part program for a loaded Base Alignment using the Walk Up and Measure Method follow these steps.

1) **RUN THE FIXTURE PROGRAM**!! The fixture program must be run so when the alignment is loaded it knows where the origin is **DO NOT SKIP THIS STEP**!!

2) Open up the Template program (if you have one) and then **File/ Save As…** and name the program correctly.

3) Go to 

Measurement Plan Tab and select  Base Alignment select 

then using the  Drop Down Button choose the proper Fixture Program Alignment and select 

. Calypso will name the Base Alignment the name of the loaded alignment.

4) Take a point or measure a feature, near the origin, on the part or fixture and look at the actuals to make sure the alignment came in properly, ***now*** is the time to find a problem.

5) Create the Clearance Plane around the part use Walk Up and Measure Method.

6) Program the part, a good programing practice is to create another alignment on the part and report all the dimension from that alignment (Do not forget to use **Pre-assignment for New Features**).

CAD Programing Method:

To create the part program for a loaded Base Alignment using the CAD Programing Method follow these steps.

1) Open up the Template program (if you have one) and then **File/ Save As…** and name the program correctly.

2) Load the CAD file: rotate and translate the model until the part origin matches the Fixture program alignment and how the part is set and orientated in the fixture.

3) Go to 

Measurement Plan Tab and select  Base Alignment select 

then using the  Drop Down Button choose the proper Fixture Program Alignment and select 

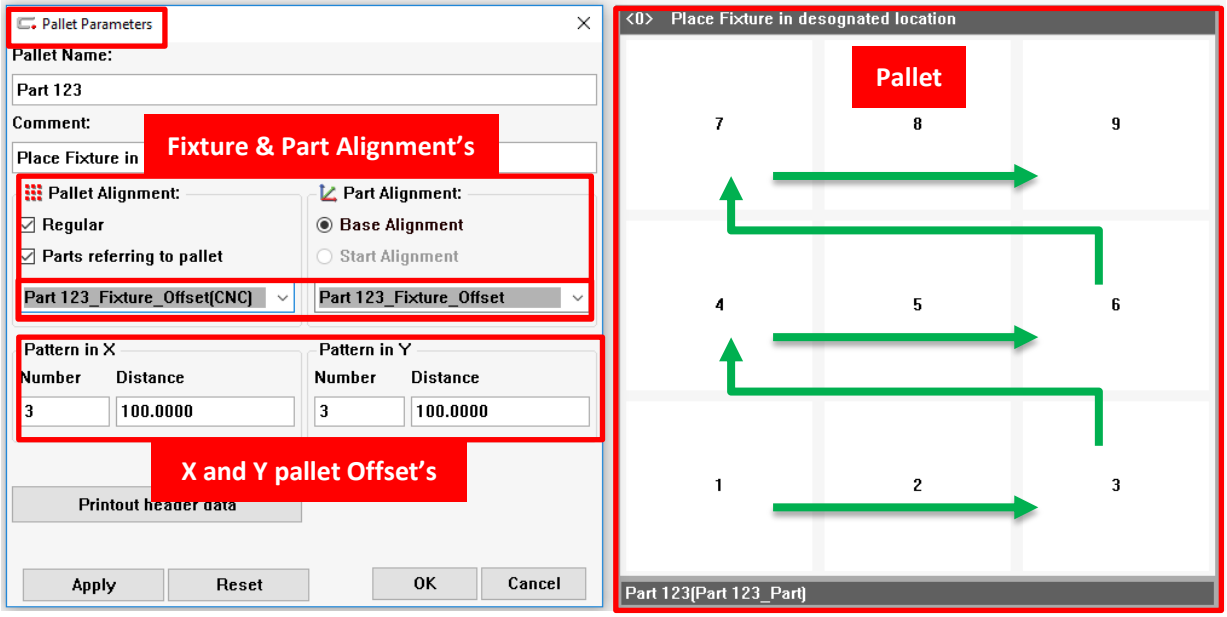
. Calypso will name the Base Alignment the name of the loaded alignment.

4) Create the Clearance Plane around the part using CAD Programing Method.

5) Program the part, a good programing practice is to create another alignment on the part and report all the dimension from that alignment (Do not forget to use **Pre-assignment for New Features**).

Adding the Pallet to Autorun for Example 2:

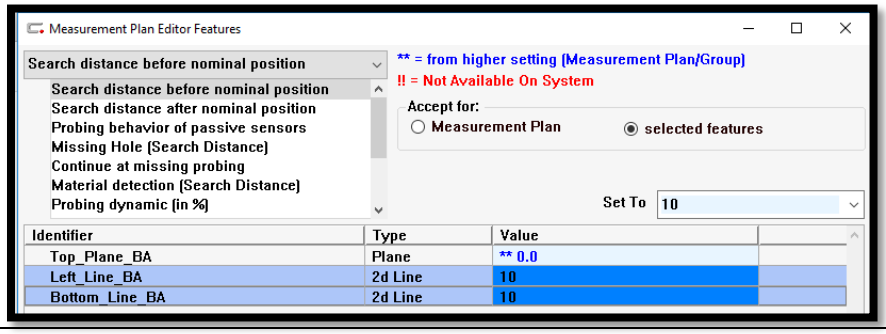
This method will use the same Pallet parameters as before except the pallet and part alignment will be different. For the Pallet Alignment you will choose the **Fixture alignment** with the **"(CNC)" extension.** The difference with the CNC alignment and the non-CNC alignment is that this alignment updates every time the fixture program runs, where the non-CNC would only update when a manual alignment was performed.
For the **Part alignment** you will want to choose the fixture alignment with the **non-CNC alignment.** If you choose the CNC alignment for the part alignment you will have a lot of unexpected issues when running your program.

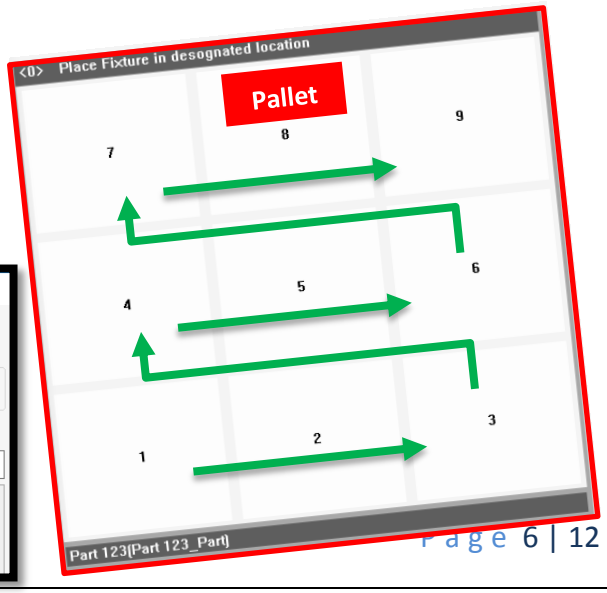


Again the benefit to using this method over example 1 is that if your fixture is misplaced or misoriented. All you need to do is rerun your fixture program (or Manual Alignment of the fixture program) and your program will still run and compensate for the tilted fixture.

TIP:

A way to allow more play in the placement of your fixture, is to modify the seach distance before nominal position. To do this you will need to go with the Measuremnt Plan Editor and you will find it under the probing dropdown.

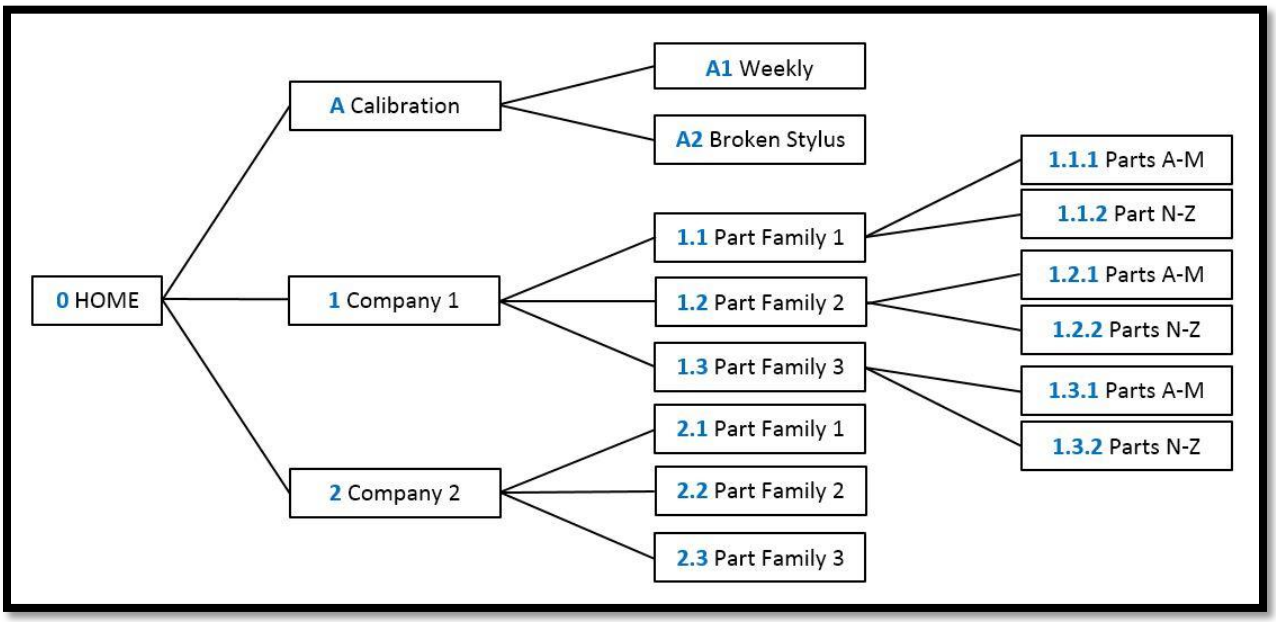




Other Helpful Tips and Tricks:

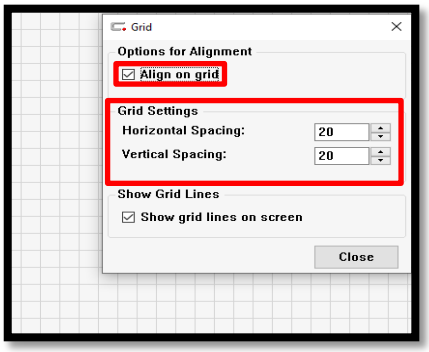
Organizing your Autorun Page:

Layers: Autorun is layer based. You can have one layer with all your parts measurement plans if you can fit it. But when we talk about layers, we can be a little more organized than that. If you want to go this route you should consider a little pre planning of how you would like it setup. Here is a simple example set up by families of parts.

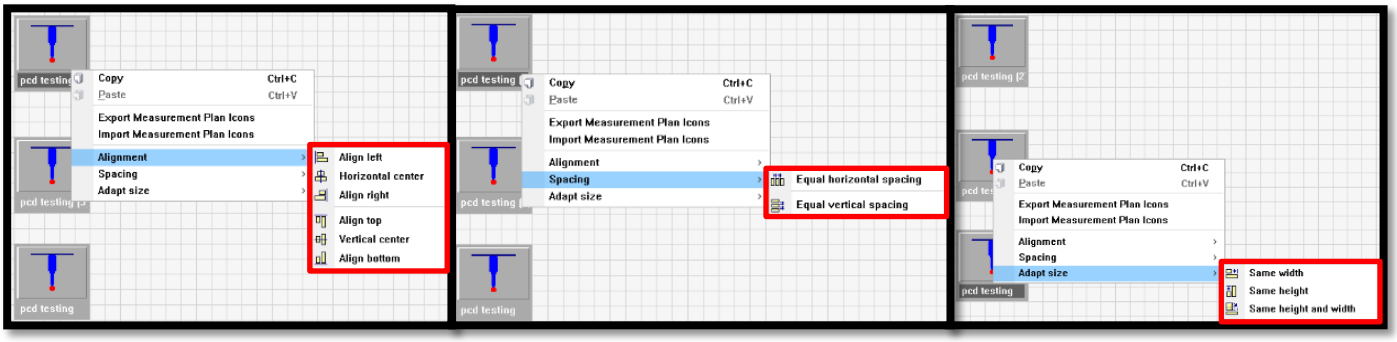


To add additional layer's, use the  Icon in the top toolbar. Additionally you can right click and select "add Desk Link." We recommend starting from a home page or main menu then add additional desk links to other sections of the autorun. (A Calibration, 1 Company 1, 2 company 2) then inside of those desk's add links to get back to the main menu or previous desk, so pretty much like a back button.

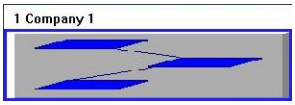
Icons: a nice way to keep your layers and icons nice and tidy. You can utalize the grid overlay function, select the edit drop down then Grid. I like to use 20x20. This number is pixle based.
The grid is a good way to keep all your layer, measurement plans and pallet icons at an even size.



Aligning Icons: A nice way to align multiple icons is to select all icons while holding ctrl on the keyboard. With multiple icons selected if you right click you have additional alignment and spacing options available now.

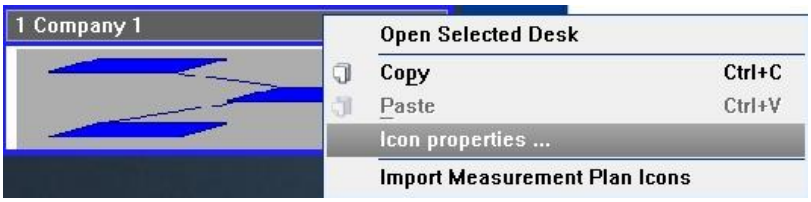


Adding Background Image: To add a background image you just simply right click anywhere on the desk with nothing highlighted and select "Create New Background Image." Then just select the the image, you may need to select the type dropdown to filter your image files. You can only have one background image on a desk layer at a time.



Modifying Layer Icon Button:

The Layer Icon Button created for **1 Company 1** will look something like this in its default form. We have the ability to modify this button in a variety of ways, we can change the button's size, fill and text. To make any changes to the button, left click once on the button, the white area on top will turn grey meaning the button is active. Now that it is active you can left click and drag it to a specific location on the layer or you can right click and select Icon properties… to further modify the button.

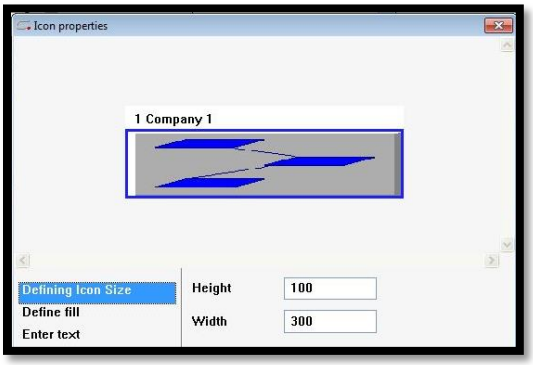


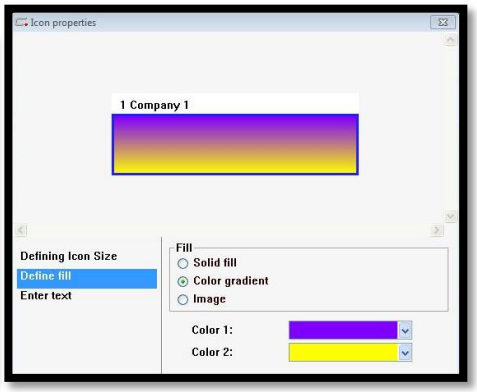
Inside the Icon properties… window:

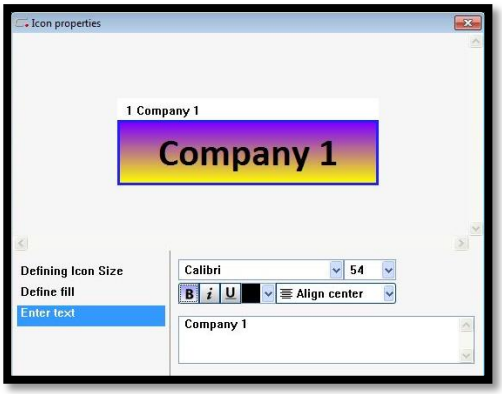
The first section allows you to modify the length and width of the icon.

The second section allows you to define the fill of the icon. You have 3 options a solid color fill, a gradient fill and an image fill.

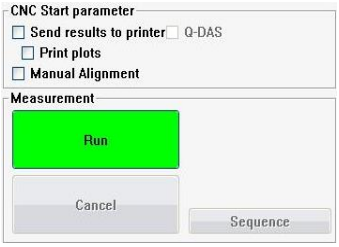
The Third section Enter Text is used to enter the label text and adjust the size, font, and text alignment.





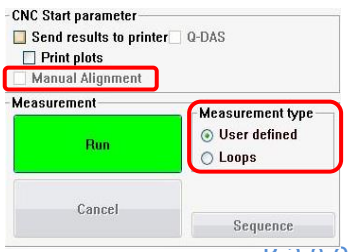


Measurement Plan vs Pallet:



Measurement Plan

The Measurement Area looks different depending on if you select a Measurement Plan or a Pallet. The Pallet has an addition area,



Pallet

Measurement type, plus Manual Alignment is **NOT** available for the Pallet.

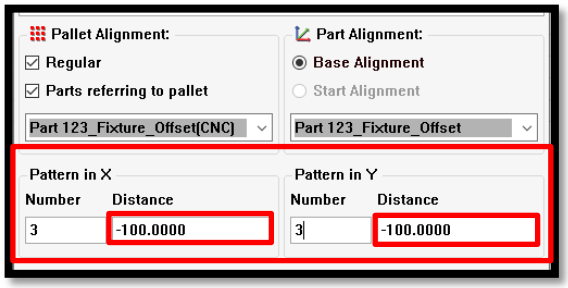
Measurement Types: There are two measurement types User defined and Loops.

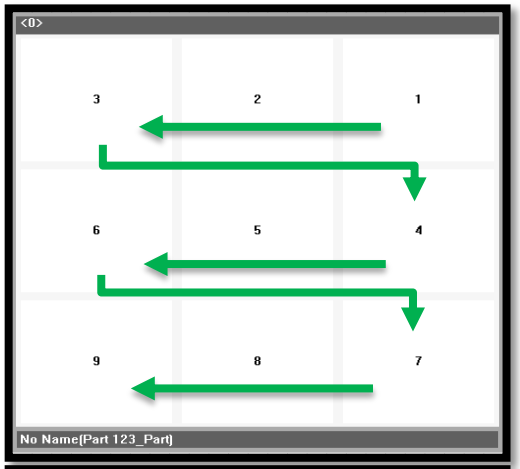
User defined: Allows the operator to select individual pallet locations to run, only the pallet locations select run (the pallet runs in the order you pick the individual locations).

Loops: Runs the parts in a specific order, in a specific direction, or may just simply lock in the entire pallet run from the first location to the last.

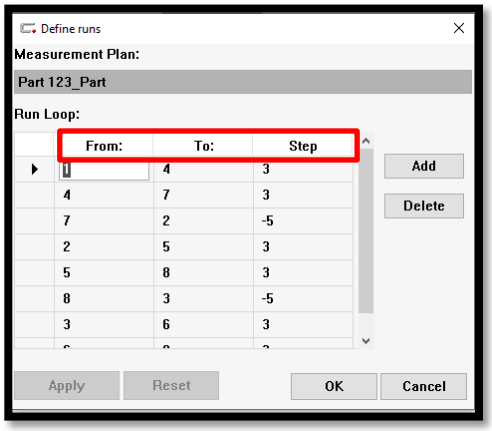
Different Run Orders:

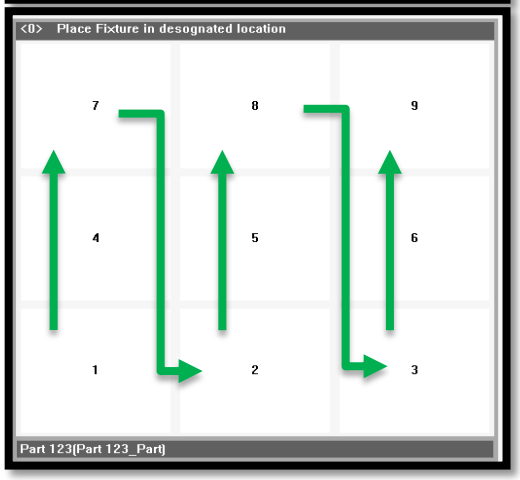
If for whatever reason you need to run your pallet backwards you, for example to account for a fixture, you can do so by simply placing a negative in the pattern direction in your pallet parameters.



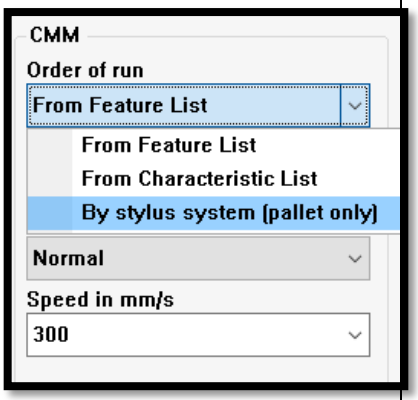


In additon to running in a different direction you can also go out of order any way you want with "define loop" do this by right clicking the pallet icon.
Just add additional loops then type in what station you want to start **From** and then go **To** and how many pallet station **Step**s it takes to get there.



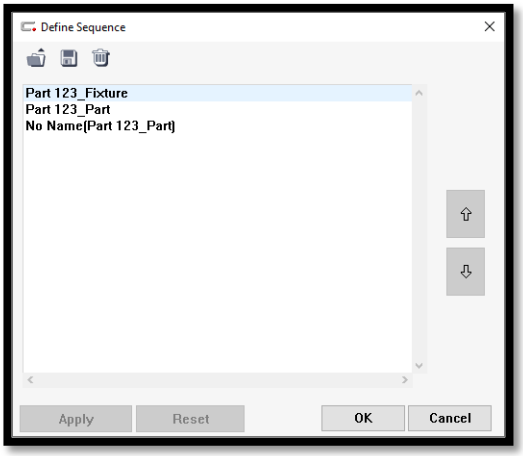


Running Pallets From Stylus System: Typically when we write a program with multiple stylus system changes, we like to strategically order our features in a way that we make the least amount of tip changes to save time. Well if you are using Calypso 2019 with autorun, you have the option to run your features by Stylus System. This means that if you have 2 or 3 different stylus systems in your Pallet program, you can set your order of run to Stylus system this will run every part in the pallet with Stylus System 1 then change to Stylus System 2 and run every part and so on. This is a very nice improvement and will save a lot of time in those multi-stylus programs.



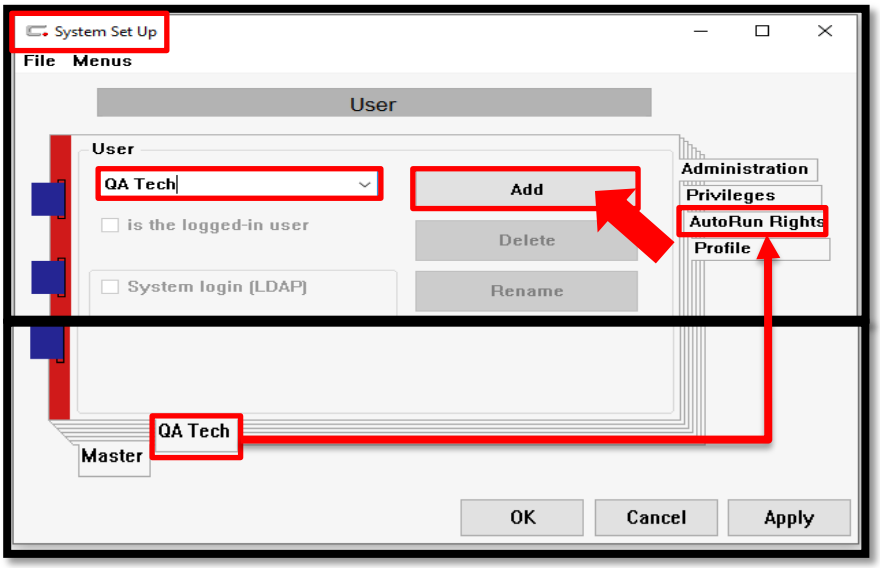
To change the Order of Run, right click the pallet and select "Define Measurement Plan Parameters." Then just go to the order of run dropdown and select "By Stylus

Systems (Pallet only).”



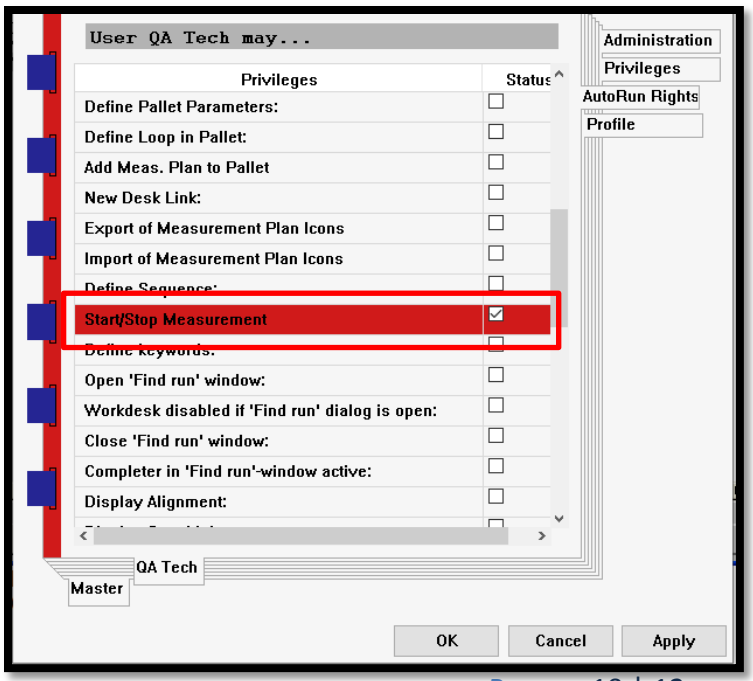
Sequence: You can use the sequence function to run multiple measurement plans and/or pallets one after another without hitting the run button in between. To do this you just need to hold the Ctrl button on your keyboard and select your measuremnt plans and/or pallet programs and hit Run. You can also re-order your sequence need be by clicking the sequence button next to the run button.

A lot of pictures? if you have a lot of part pictures, setup instructions, fixture pictures, background images ect. You might want to consider creating a separate folder on the local drive that holds all of these pictures. If you are pulling all of these files from the server or external drive this could cause a long autorun load time when opening your autorun page. I like to keep the folder right in the C: drive labeled Autorun to keep it simple. Good practice to keep your autorun or your “.Arn” file in this folder as well.



User Accounts and Autorun: To add additional user login simply go to the **Extras>Settings>User** in the top toolbar dropdowns. Or if you are in Autorun **Configuration>Users>Change User** in the top toolbar dropdowns.
In the administration tab you should see the current enabled user. To create a new user rename the current user and click “Add.”

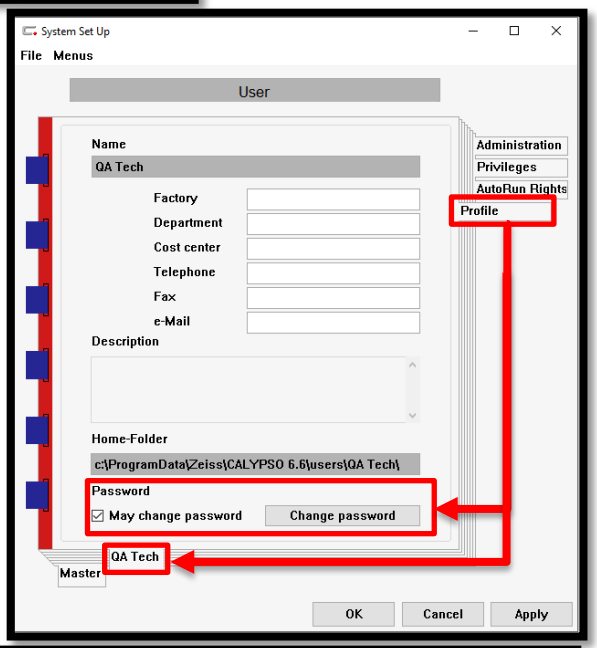
Locking User Privileges: For some companies with operators that have little calypso experience it is good to only allow and deny certain privileges. This will prevent the user from causing any harm by changing any settings or modifying any programs on accident. Select the user, then go to the autorun rightss tab.



In this window you can enable and disable any privileges you choose. NOTE: you must allow “Start/Stop Measurement.” Check the box to enable access to the defined privileges. These rights may need to be adjusted and tweaked for the operator to be able to perform all tasks. We recommend testing this out before locking the user out completely.
Tip: Enable Change Privileges while testing.
Common Rights: Start/Stop Measurement, Exit, Define Sequence, Display Stoplight, _Open Measuremnt Run Info, Open Last Custom Printout, Change Stylus,
Hit **“Apply”** when finished.

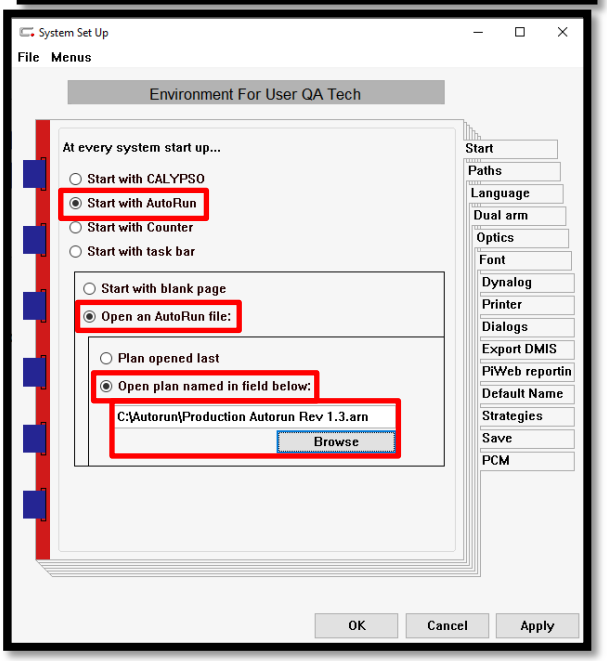
If the user attempts to perform a task that is not allowed they will be prompted with the message below.

Changing Users: To change users for testing if you are in calypso select **Extras>Settings>Users.** Then select the **user tab** you would like to switch to, then select **"Switch To…"**
if you are in Autorun you will go to **Configuration>User>Change User.** Then it's the same thing, select the **user tab** you would like to switch to, then select **"Switch To…"**



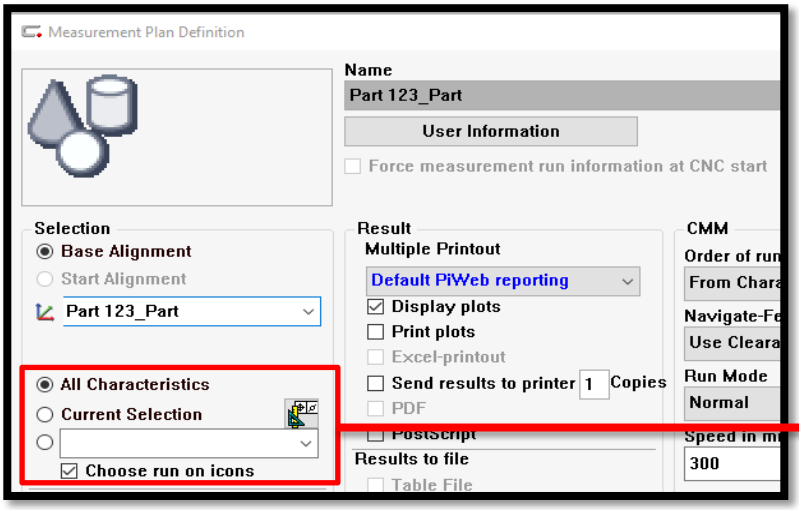
Login Password: If you are locking your users out of calypso and other sections of the software you can set up a login password that is prompted when the software opens. To do this under the same user privileges section under the **Profile Tab.** Then select **"Change Password"** to add a password and uncheck **"May change password"** if you don't want them to be able to change it.

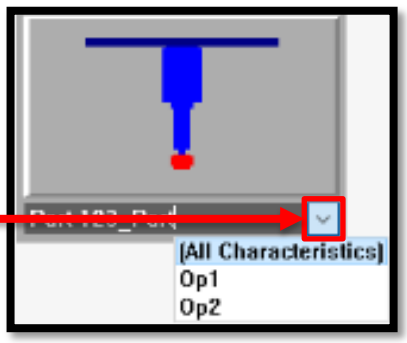
Configuring Autorun to Boot up Automatically At Login: From an empty workdesk in calypso logged in as QA Tech go to **Extras>Settings>Enviroment.**
From here you can check…
Start with Autorun
Open an Autorun File:
Open Plan Named in Field Below:
Click **Browse** to search for you autorun file. As mentioned before it is best practice to keep your autorun files and pictures in an autorun folder on your C: Drive to speed up load time.



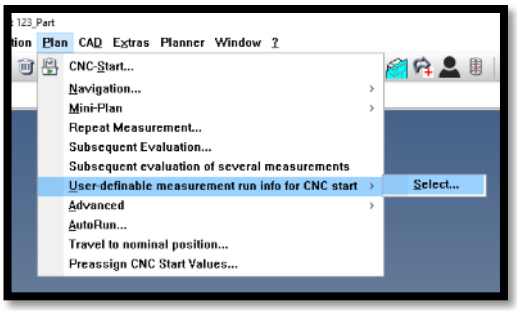
Now when The QA Tech logs on it will automatically load the correct autorun file.

Miniplans With Autorun: A mini plan can be very usefull when you have multiple operations or maybe have an FAI program but just want to check some in process checks. To enable the option on the icon, right click a pallet or measuremnt plan that has a miniplan in it and select **"Define Run Parameters"** to modify the run screen. Check the **"Choose Run on Icons"** or select a specific mini plan to always run.





User Information: User Information will allow the operator to view additional information about the part their measuring such as setup instructions or a print ect. I recommend copying the setup instructions directly into the inspection folder. Then while the program is open go to **Plan>User-Definable Measurment Run Infor for CNC Start>Select…** From here just select the file in your inspection folder you added. This file can be anything from a picture to a document and even a video.
Now if an operator selects a measurment plan icon they can click the user information button in the autorun screen.



Additionally you can force these operator instructions to appear when they run any pallet or measurement plan. To do this right click a pallet or measuremnt plan select **"Define Run Parameters"** to modify the run screen. Click the check box **"Force Measurement Run Information at CNC Start."**