

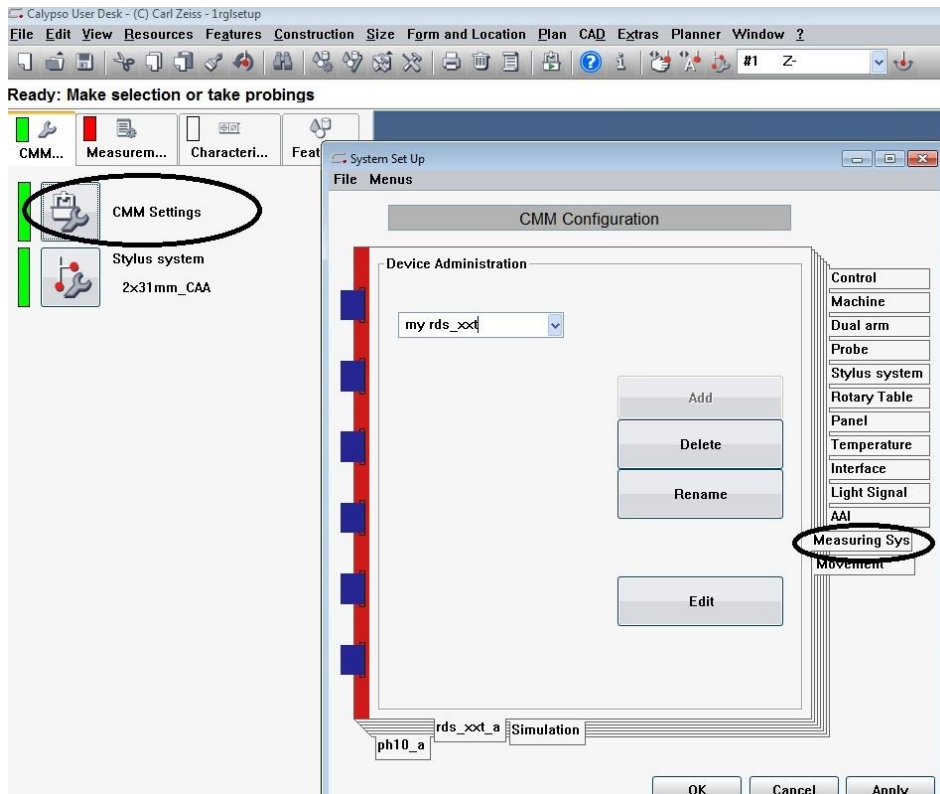
Using Planner/Simulation

Calypso programmers can make good use of time and machine resources by taking advantage of offline programming. In addition, simulation of the probe path can help new programmers feel more confident and help reduce collisions on the “first run” of a new program on a CMM (due to simple programming errors).

For purposes of this discussion, let’s assume the programming will be done on a separate seat of Calypso that’s not actually hooked up to a machine.

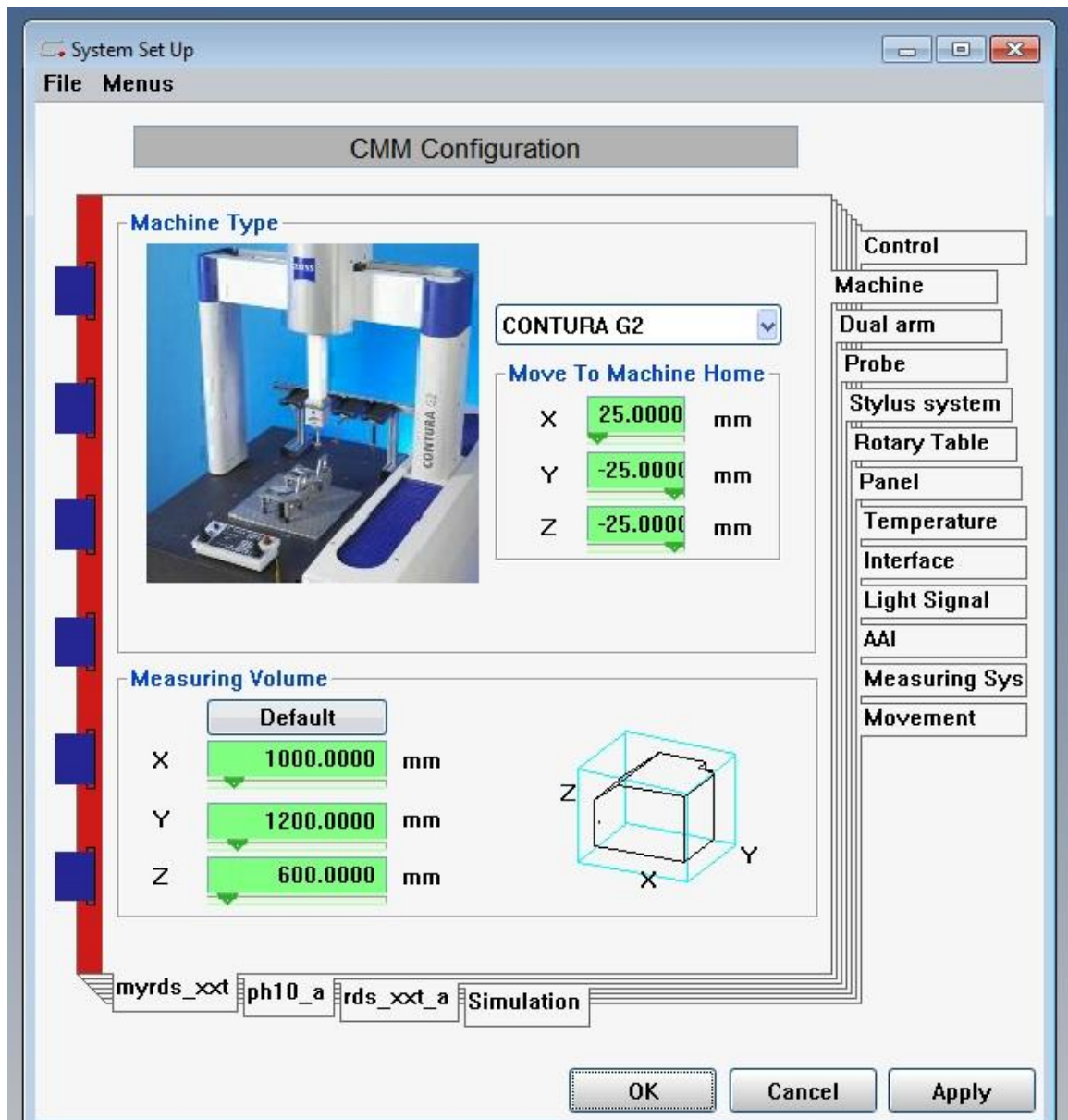
To get started, a machine tab that reflects your actual machine(s) should be set up. Remember that if you have multiple machines, you simply add as many machine tabs as necessary.

To do this, go to CMM SETTINGS tab. Then go to the MEASURING SYS TAB.

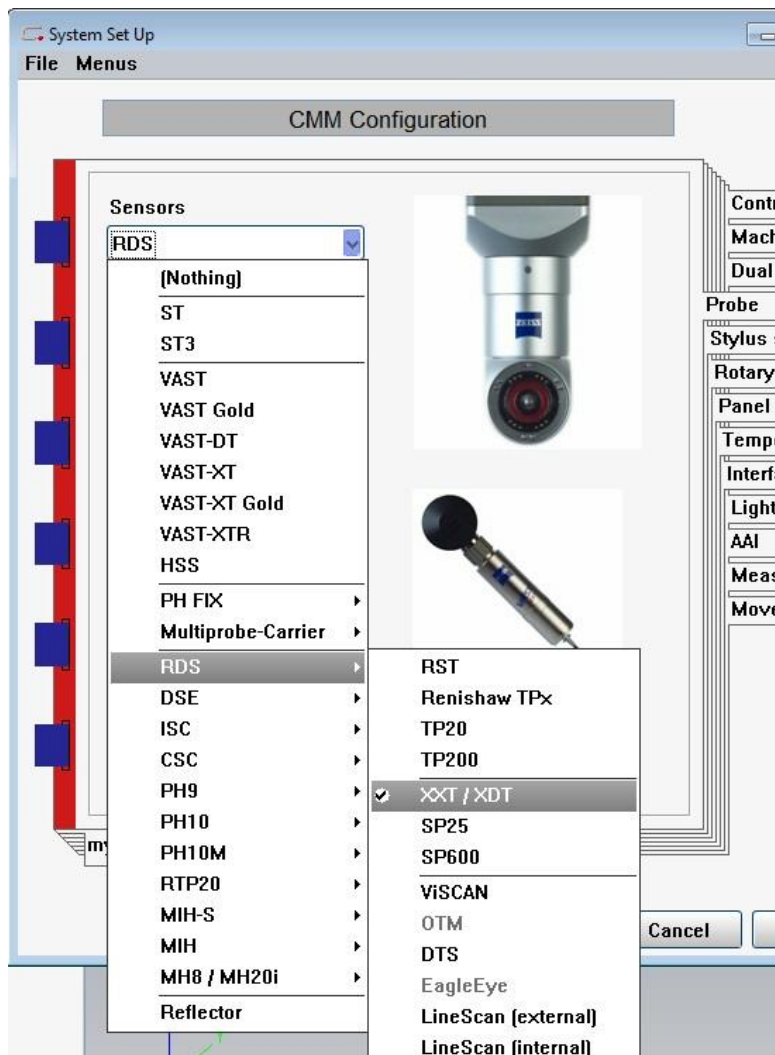


Type in the name of the machine tab you'd like to add, then hit enter. When you hit enter, the ADD button becomes active. Add your new machine tab by hitting the active ADD button.

Once you've added the tab successfully, go up to the MACHINE tab. Put in the appropriate machine type with the blue drop down. (In this example, a Contura G2). Put in appropriate values as shown for movement off the limits after the machine homes. Then put in values that reflect the size of the machine, such as 1000,1200,600. This is the machine travel in MM.

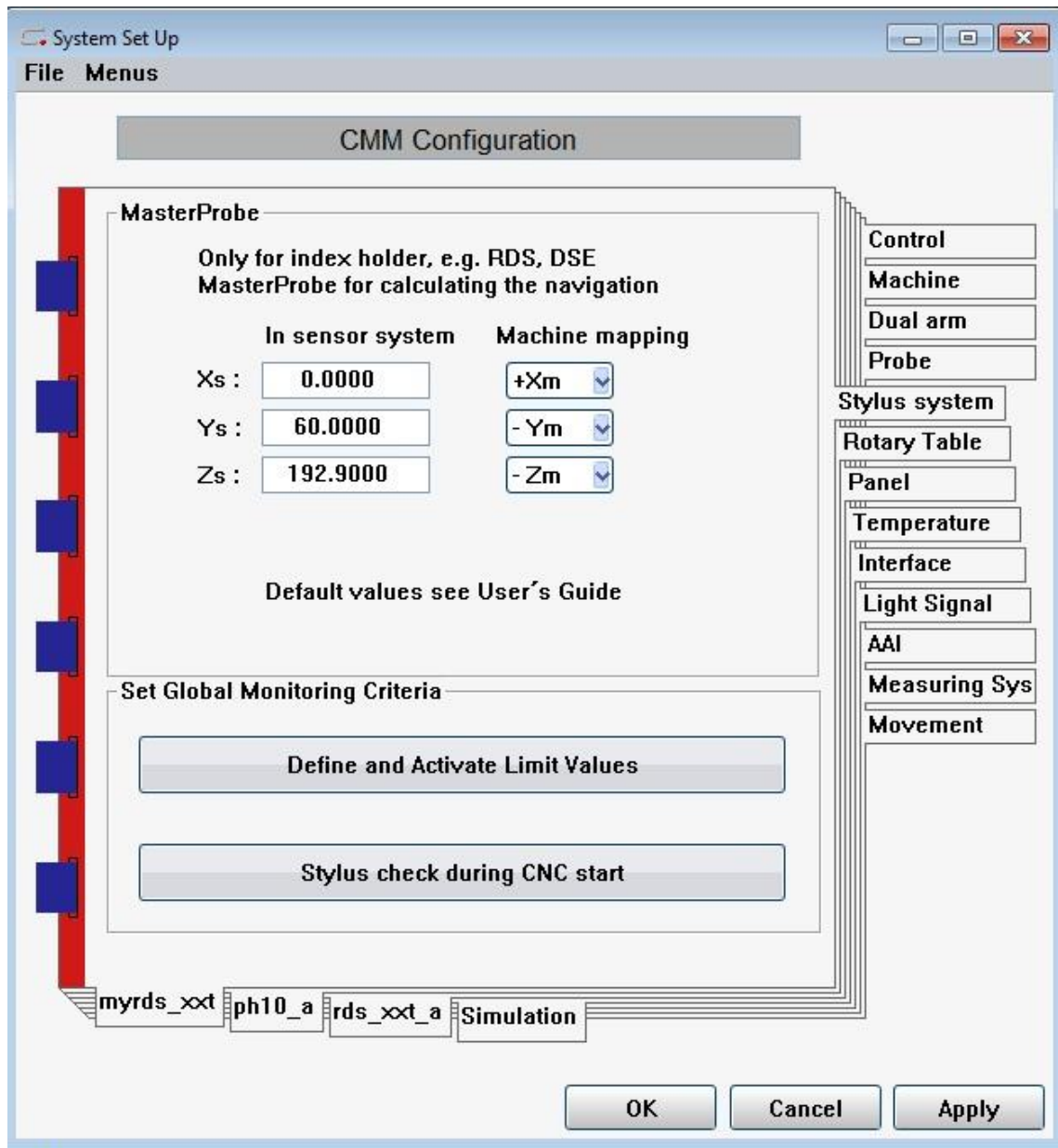


Hit apply, then go to the PROBE tab. Select the appropriate configuration that you're simulating. In this example, it's an RDS head with an XXT probe.



Hit apply, then move to the STYLUS SYSTEM tab. Fill in the Xs, Ys, and Zs values, paying careful attention to the corresponding drop down settings. In this example, they are +Xm, -Ym, -Zm. These values change per machine

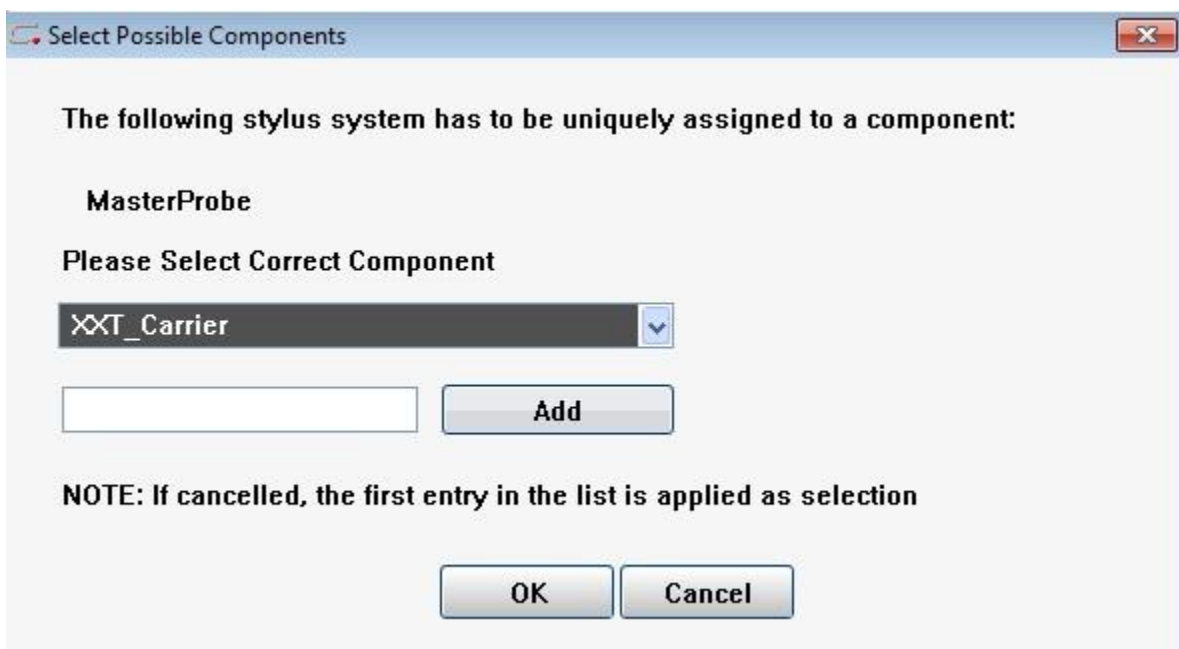
configuration. You can either copy them from your CMM or call Zeiss for help. The values in this example are good for an RDS head with an XXT sensor.



Hit apply, then move back up to the CONTROL tab and connect your new machine tab. (Hit the big CONNECT button in the center of the screen). Once you've connected, there will be a delay before the following message pops up:

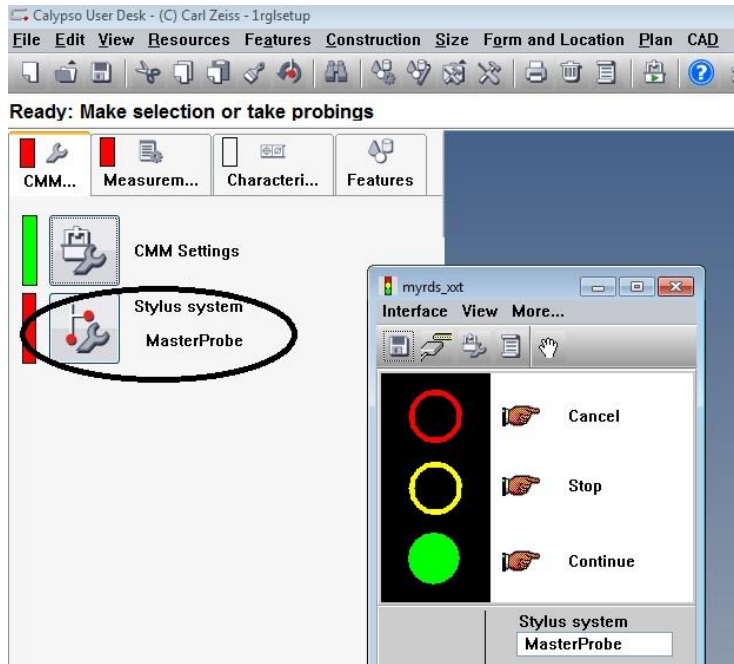


Hit OK and allow Calypso to create a Masterprobe for your machine tab. A component selection screen may appear.

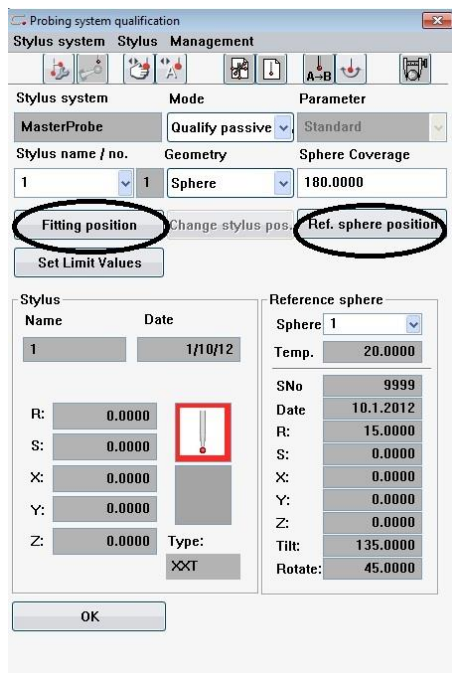


Hit OK. No need to fill anything in.

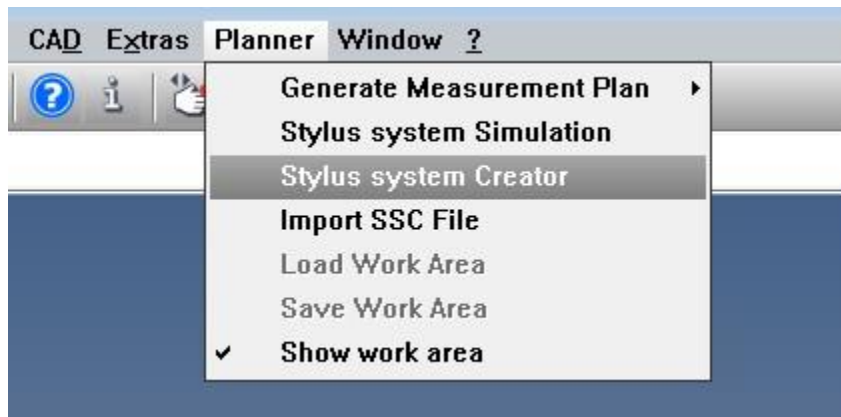
The next step is to do a virtual “Ref Sphere Position”. Go to the STYLUS SYSTEMS button.



You can Reference Sphere Position, and if you have an RDS-CAA system, also perform the Fitting Position. This is done only once per new machine tab.



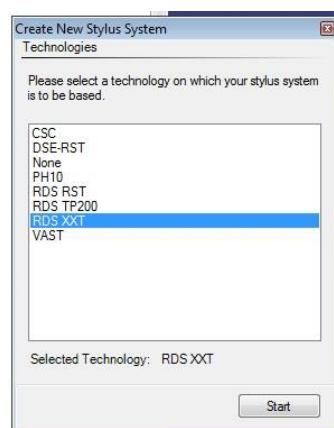
The next step is to build a MasterProbe to be used for on-screen simulation. Go to:



New stylus system

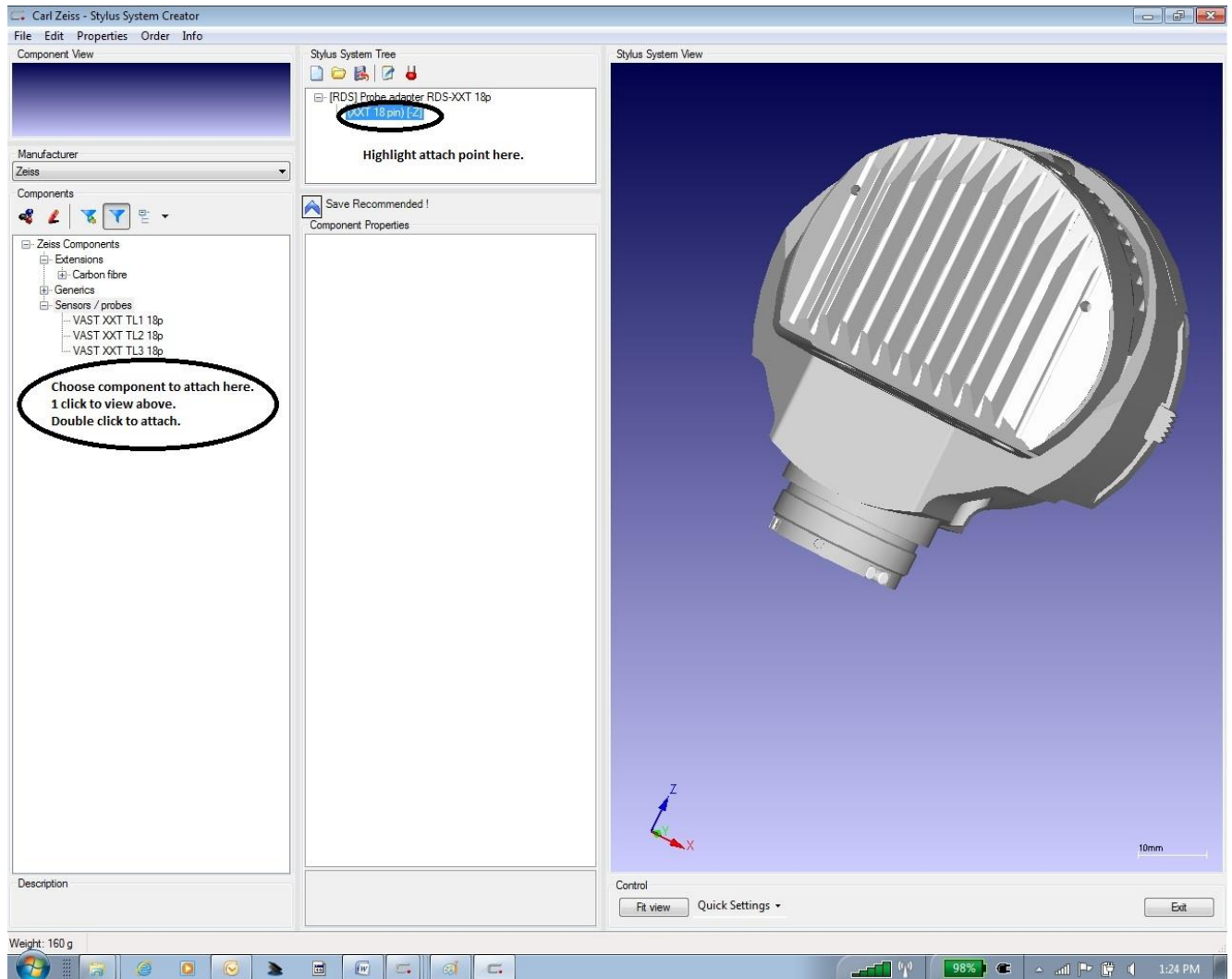


Select the correct type of probe.




Starting with the Probe adapter, start to build your probe by double clicking the correct component in the list on the left. Then continue to highlight the position

you'd like to add to in the list on the upper middle of the screen. For an easy down tip, just continue to add your components to the z- position. For stars, highlight the node you wish to add to, such as x+, then double click the correct component in place.




Once you're finished selecting components (in this case, MasterProbe buildup), go to the SAVE AS button and name your component. For MasterProbe, it must be named exactly as shown.

Component View




Manufacturer
Zeiss

Components



Zeiss Components
Generics

Stylus System Tree



- [RDS] Probe adapter RDS-XXT 18p
 - VAST XXT TL3 18p
 - MasterProbe XXT TL3

Main Axis Angle: 0.00

Save Recommended !

Component Properties

Carl Zeiss Webshop: [Order this component](#)

Description

Category	Master probes
Collection Name	XXT
Manufacturer	Zeiss
Name	MasterProbe XXT TL3
Name Scheme	Sensors
Order Number	master probe XXT TL3
Vendor Order Number	Unknown

Functional Properties

Load Limit	0
Material	Unknown
Weight	5.6

Stylus System Properties

Properties

Name:

Serial Number:

Constructor:

Date: 01/10/2012

Workpiece:

CMM:

Company:


Department:

Comments:

Compatible with Version 2.0

Control

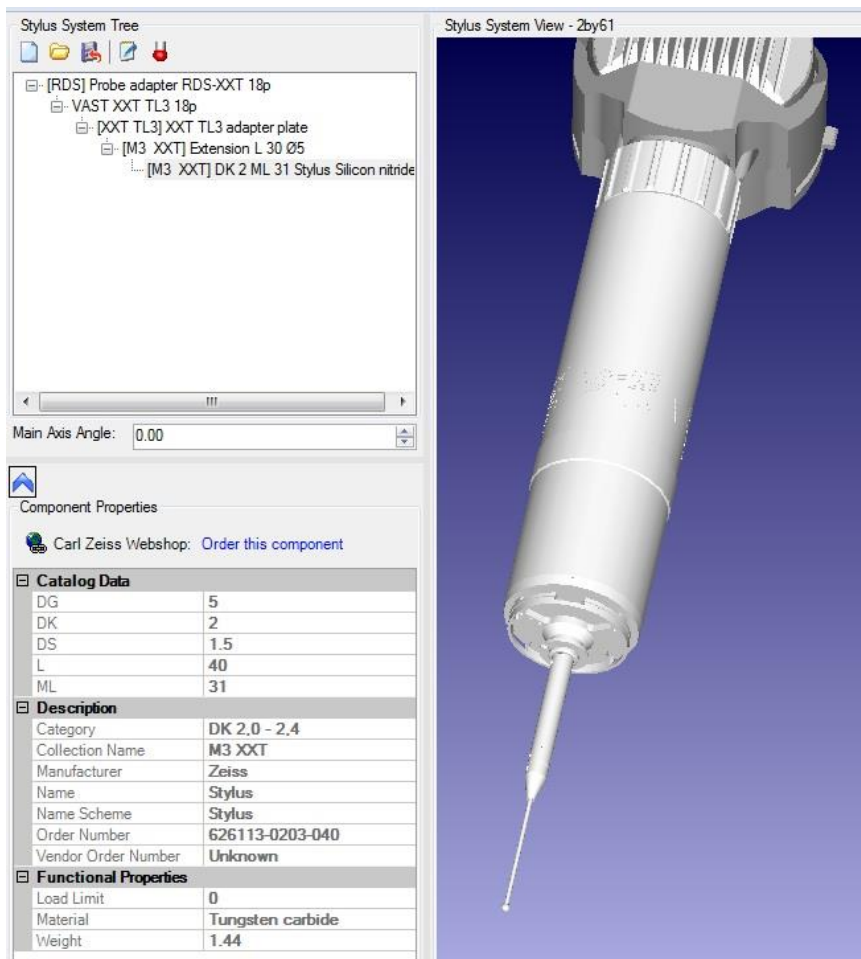
Preview



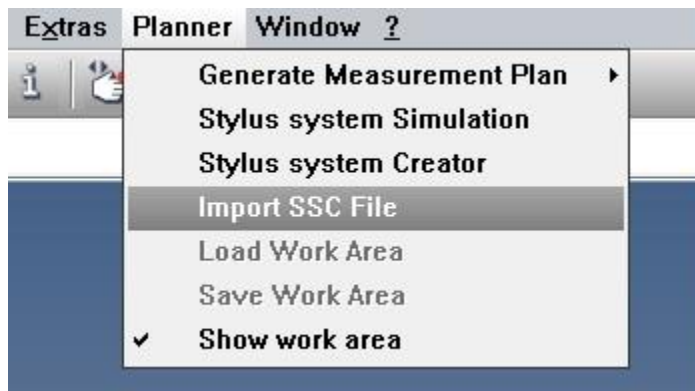
You must name the probe in the screen above, then name it again when the save as screen pops up. **PAY ATTENTION TO WHERE YOU'RE PUTTING YOUR SIMULATION PROBES!** If you're setting up more than one machine tab for different CMM configurations, you'll want a MasterProbe for each different setup. It's recommended to have a folder for each machine tab.

At this point you may continue to build any other probes you'll need. It's acceptable to use both Zeiss and Renishaw components in the same buildup if necessary. For example, if you're building up a Renishaw star and can't find components you need, you could substitute in a Zeiss M2 cube. The components are close enough in nature that it wouldn't adversely affect simulation and collision detection.

Another quick example for a 2mm by 61mm buildup:

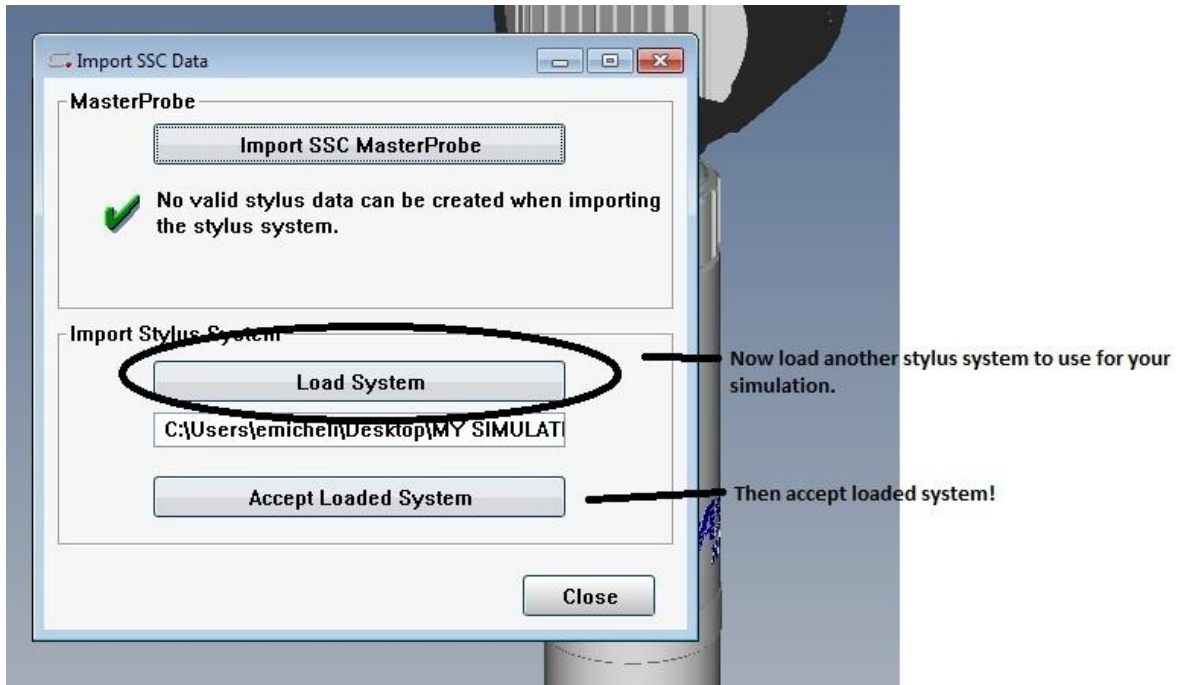


It's best to build up another probe to use besides the MasterProbe. When we go to the next step, which is to import SSC MasterProbe, we like to then have another probe to load in for simulated measurements. Otherwise, you'll need to give MasterProbe another name when you load it in to use for measurements.

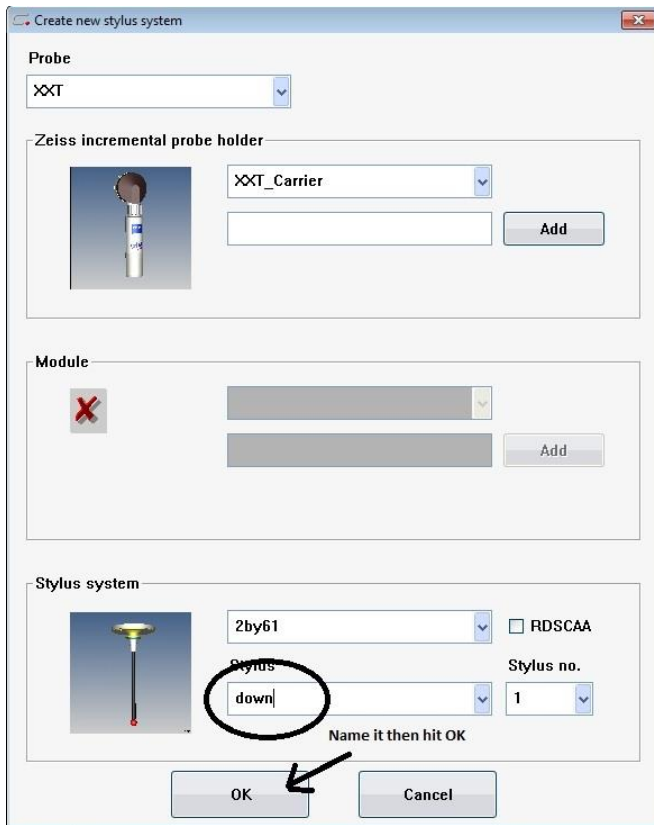


First do this. Browse to find the MasterProbe you just saved in the Stylus System Creator.

Import SSC MasterProbe is only done once for each machine tab you set up. From then on, you load in other simulation probes to use in your on-screen simulation.

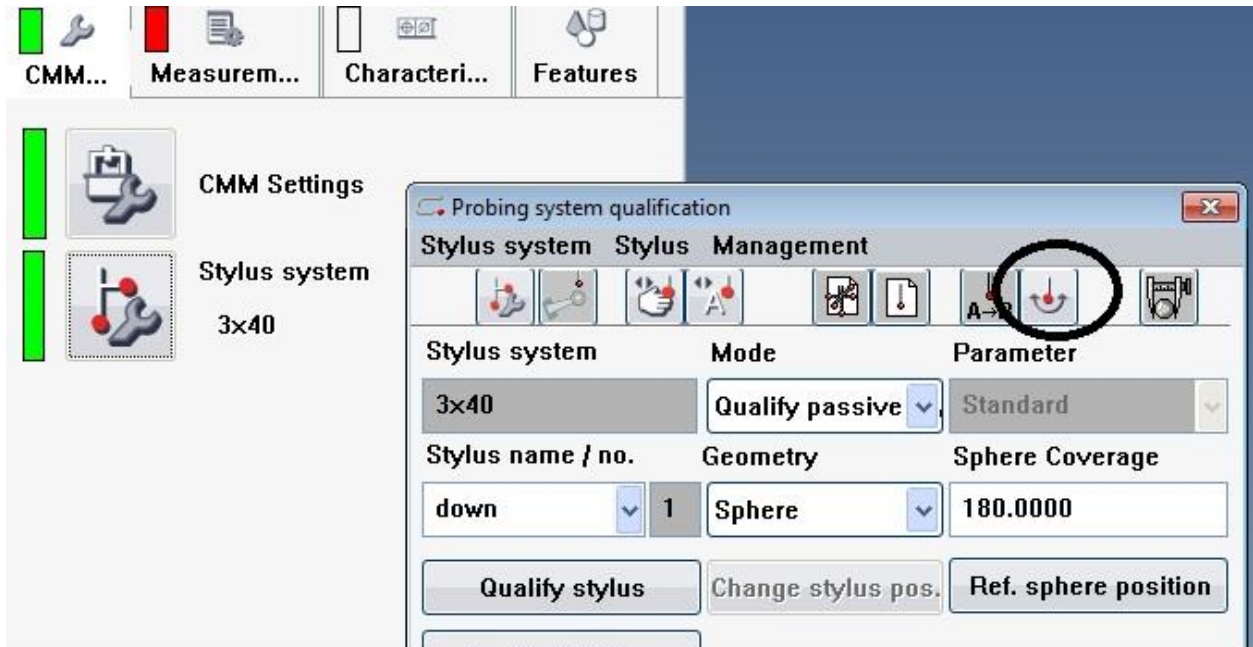


When you accept loaded system, you must name the tip you wish to use. In this example, we named it “down”.

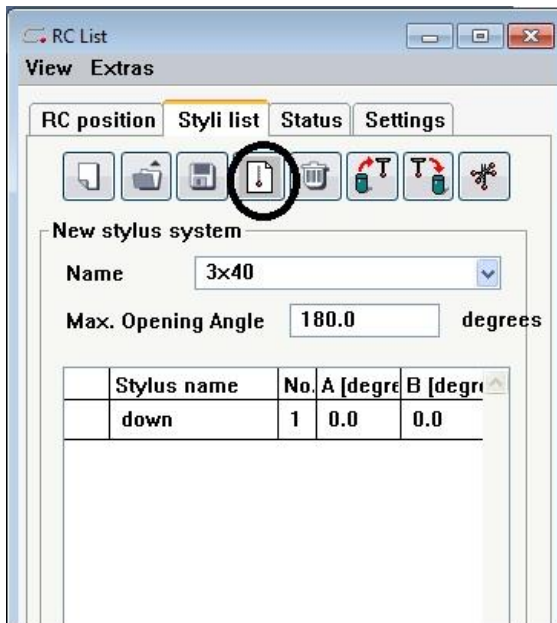


If you wish to add additional tip rotations for use with your RDS head, here's how you proceed:

Go to the STYLUS SYSTEM/ROTATE SCREEN as shown below:



Go to the Styli List tab and select the new tip icon shown below:



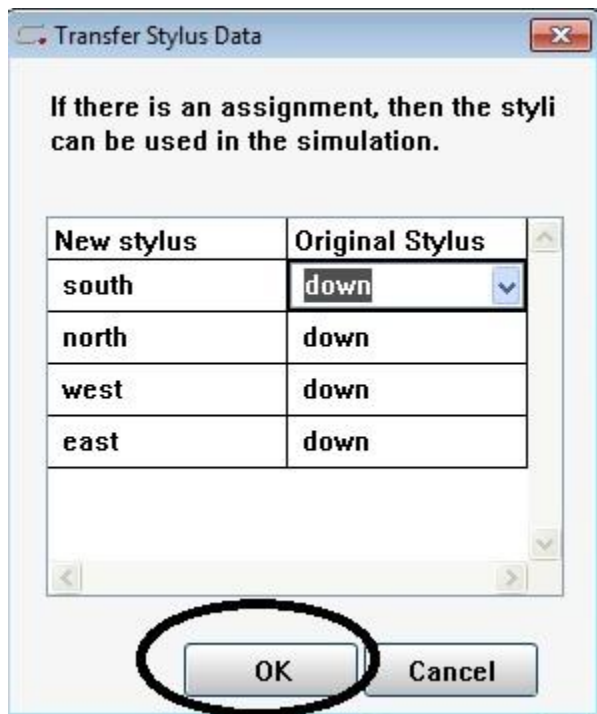
Click the new tip icon to add as many tip rotations you need. In our example we will add the standard north, east, south and west rotations. When you've finished typing in the names and A/B angles you need, hit the CREATE NEW STYLUS SYSTEM button shown below:



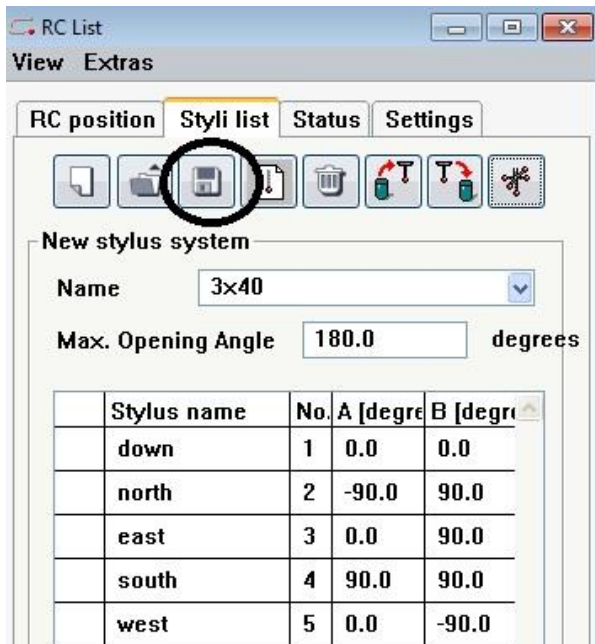
You will be presented with the following screen. Make sure to select UPDATE!



Hit OK to accept the new names you've assigned to your additional tips.



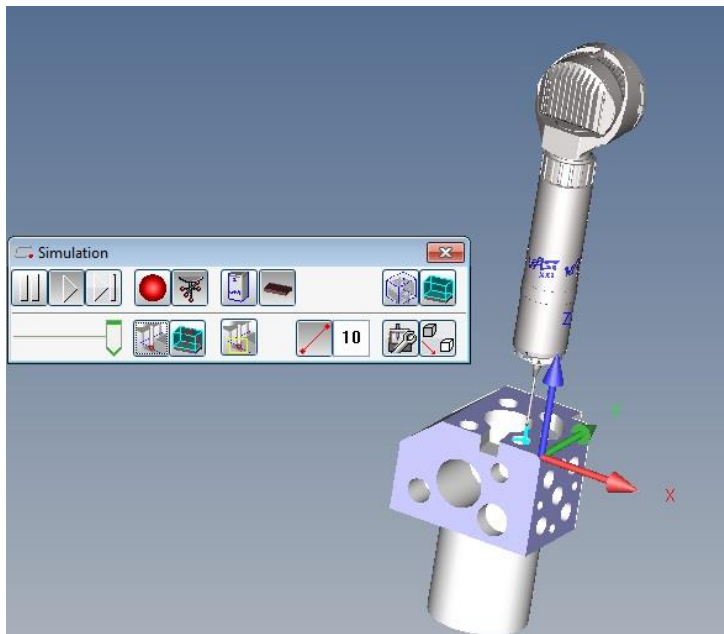
Save your updated stylus system list.



The additional tip rotations are saved as a .txt file.

To run your program in the SIMULATION MODE:

PLANNER/STYLUS SYSTEM SIMULATION

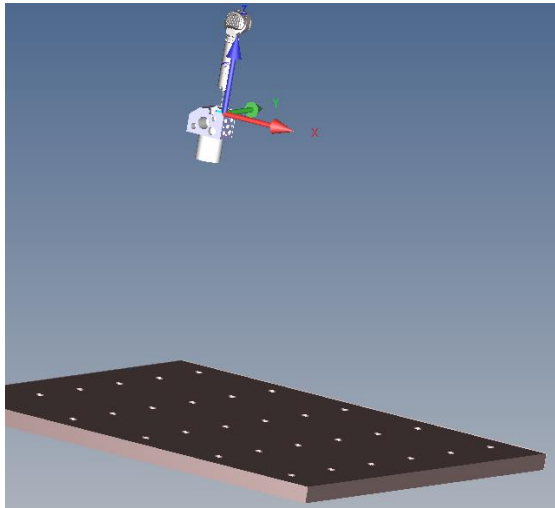


Run your program using the usual Calypso run button on main toolbar. The Simulation toolbar allows you to modify your view of the run as follows:

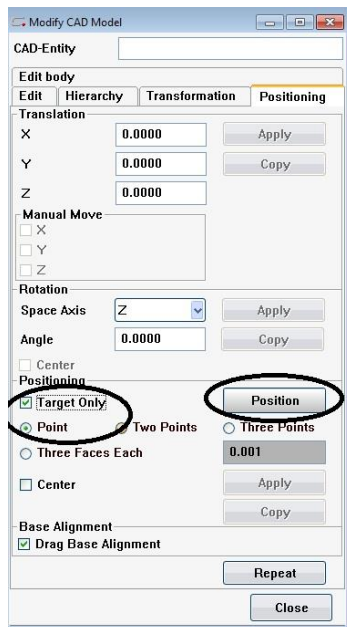


1. Pause playback
2. Resume playback
3. Step playback
4. Show stylus
5. Show stylus system
6. Show probe
7. Show worktable
8. Show clearance planes
9. Show machine volume
10. Playback speed
11. Collision detection
12. Check machine volume
13. Follow stylus
14. Alter trailing line
15. Machine settings
16. Move CAD model

If you wish to move your model onto the machine worktable, use button 16. (Move CAD Model).



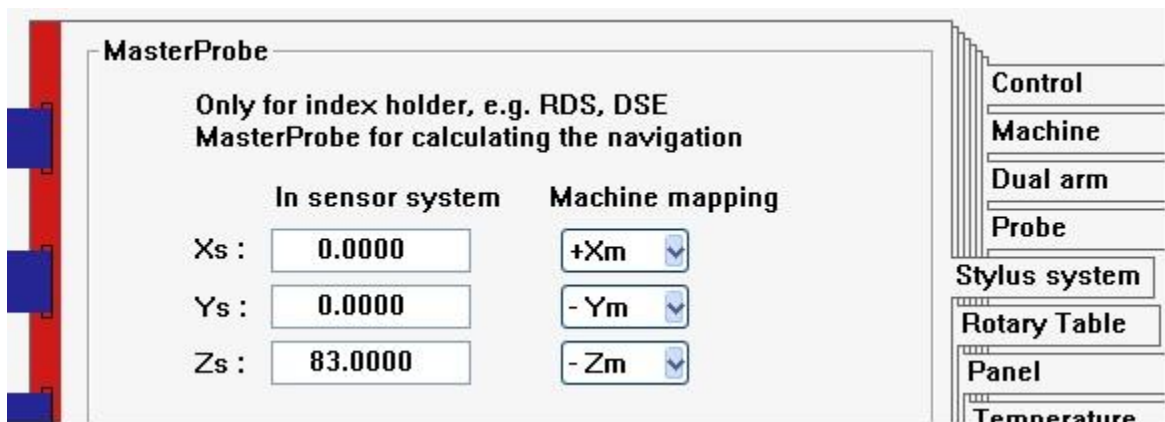
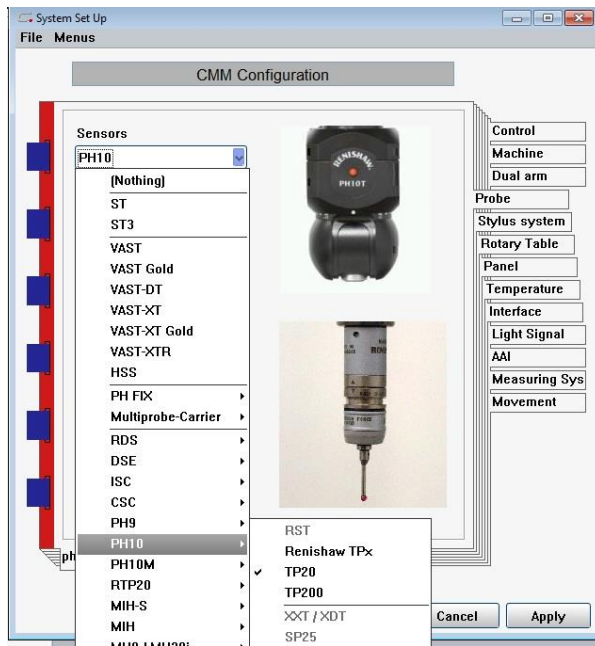
Select TARGET ONLY and POINT, as shown below. Then hit the POSITION button. Click a point on the bottom of your CAD model, then click the point on the worktable where you wish to place it. Hit APPLY. Your model is now placed on the worktable for better simulation.



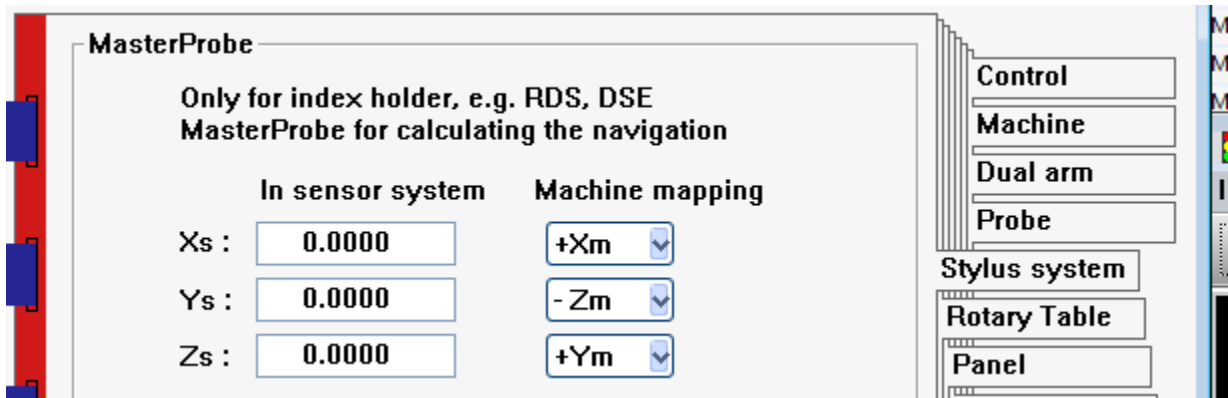
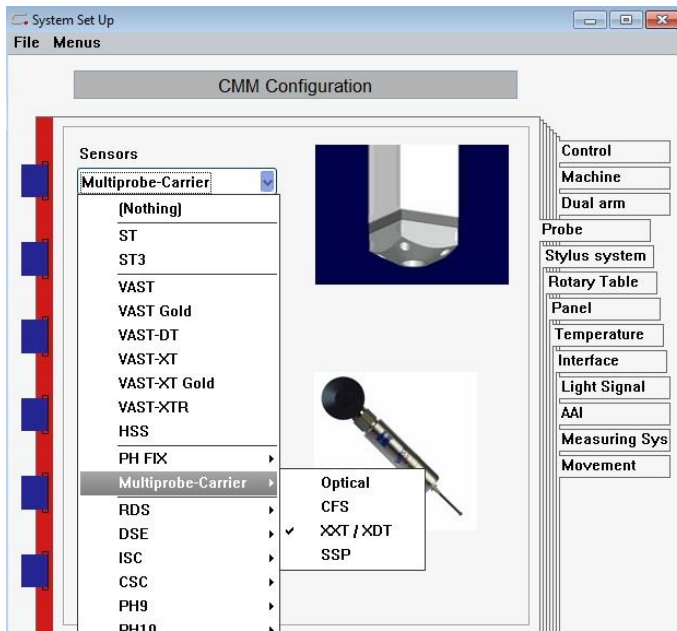
ADDENDUM:

Machine tab setup parameters for other common configurations:

1. PH10 with TP20:



2. Duramax



3. RDS-TP20

