# 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.

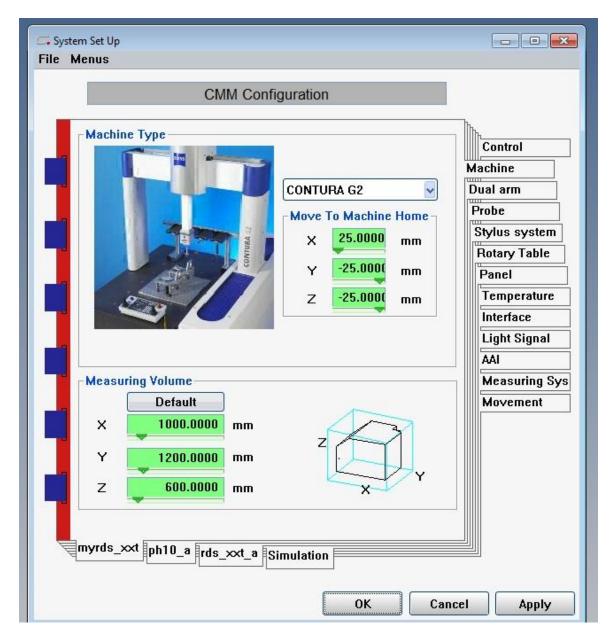
To get started, a machine tab that reflects your actual machine(s) should be set up. Remember that if you have multiple machines, you simply add as many machine tabs as necessary.

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

| Cal  | ypso l | Jser De | sk - (C) Ca   | rl Zeis | s - 1rglsetup     |           |              |       |              |          |              |       |         |           |        |      |             |                                |      |
|------|--------|---------|---------------|---------|-------------------|-----------|--------------|-------|--------------|----------|--------------|-------|---------|-----------|--------|------|-------------|--------------------------------|------|
| File | Edit   | ⊻iew    | <u>R</u> esou | rces    | Fe <u>a</u> tures | Construct | ion <u>S</u> | ize   | Form and L   | ocation  | <u>P</u> lan | CAD   | Extra   | s Pl      | anner  | Wind | ow <u>?</u> |                                |      |
|      | â      |         | ✤ 🗍           | 1       | \$ 4              |           | 87           | Ś     | 20 3         |          |              | •     | 1       | <u>ال</u> | 1 🖏    | #1   | Z-          | ~                              | •    |
| Read | ly: N  | lake    | selectio      | on o    | r take pro        | obings    |              |       |              |          |              |       |         |           |        |      |             |                                |      |
| CMN  | \$     | Mea     | 🖪<br>surem    |         | ) 🖅<br>Characteri | . Feat    | 🗔 Syste      | em Se | et Un        | _        | _            |       |         |           | _      |      | _           |                                |      |
|      |        | _       |               | -       | -                 |           | File M       |       |              |          |              |       |         |           |        |      |             |                                |      |
|      | Ŷ      | 3       | CMM Se        | ttings  | >                 |           |              |       |              | C        | СММ С        | onfig | uratior | n         |        |      |             |                                |      |
|      | L      |         | Stylus s      | yster   | n                 |           |              | De    | evice Admini | stration |              |       |         |           |        |      |             | ]]h                            |      |
|      | •2     | 3       | 2×31m         | m_C/    | AA                |           |              | ſ     | myrds xxt    |          | *            |       |         |           |        |      |             | Control<br>Machine<br>Dual arm |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             | Probe                          |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             | Stylus sy                      | stem |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           | Add    |      |             | Rotary Ta                      | ble  |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             | Panel                          |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         | J         | Delete |      |             | Temperat                       | ure  |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         | n         | ename  |      |             | Interface<br>Light Sigr        |      |
|      |        |         |               |         |                   |           | -1           |       |              |          |              |       |         | n         | CHAINE |      |             | AAI                            |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      | C           | Measuring S                    | ys S |
|      |        |         |               |         |                   |           | _            |       |              |          |              |       |         |           |        |      |             | Movement                       |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           | Edit   |      |             |                                |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             |                                |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             |                                |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             |                                |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       |         |           |        |      |             |                                |      |
|      |        |         |               |         |                   |           | F            | ph1   | rds_∞<br>0_a | t_a Si   | mulatio      | n     |         |           |        |      |             | <u> </u>                       |      |
|      |        |         |               |         |                   |           |              |       |              |          |              |       | [       |           | ок     |      | Cancel      | Apj                            | oly  |

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.

| G System |                                                                                                                                                                                                          |     |                     |                                                                                                                |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------|----------------------------------------------------------------------------------------------------------------|
|          | CMM                                                                                                                                                                                                      | 1 C | onfiguration        |                                                                                                                |
|          | Sensors          RDS         RDS         ST         ST         ST3         VAST         VAST Gold         VAST-DT         VAST-XT         VAST-XTR         HSS         PH FIX         Multiprobe-Carrier |     |                     | Conti<br>Mact<br>Dual<br>Probe<br>Stylus<br>Rotary<br>Panel<br>Temp<br>Interf:<br>Light<br>AAI<br>Meas<br>Move |
|          | RDS                                                                                                                                                                                                      | •   | RST                 |                                                                                                                |
|          | DSE                                                                                                                                                                                                      | •   | Renishaw TPx        |                                                                                                                |
|          | ISC                                                                                                                                                                                                      | •   | TP20                |                                                                                                                |
|          | CSC                                                                                                                                                                                                      | ۲   | TP200               |                                                                                                                |
|          | PH9                                                                                                                                                                                                      | •   | 🔹 XXT / XDT         |                                                                                                                |
|          | PH10                                                                                                                                                                                                     | +   | SP25                |                                                                                                                |
|          | PHIUM                                                                                                                                                                                                    | •   | SP600               |                                                                                                                |
|          | RTP20                                                                                                                                                                                                    | ۲   | VISCAN              |                                                                                                                |
|          | MIH-S                                                                                                                                                                                                    |     | OTM                 | Cancel                                                                                                         |
|          | MIH                                                                                                                                                                                                      |     | DTS                 |                                                                                                                |
|          | MH8 / MH20i                                                                                                                                                                                              | •   | EagleEye            |                                                                                                                |
|          | Reflector                                                                                                                                                                                                |     | LineScan (external) |                                                                                                                |
|          | 1                                                                                                                                                                                                        |     | LineScan (internal) |                                                                                                                |

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.

| System Set Up<br>File Menus                                                                                                                                                                             |                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| CMM Configuration                                                                                                                                                                                       |                                                                                                               |
| MasterProbe<br>Only for index holder, e.g. RDS, DSE<br>MasterProbe for calculating the navigation<br>In sensor system Machine mapping<br>Xs : 0.0000 +Xm V<br>Ys : 60.0000 -Ym V<br>Zs : 192.9000 -Zm V | Control<br>Machine<br>Dual arm<br>Probe<br>Stylus system<br>Rotary Table<br>Panel<br>Temperature<br>Interface |
| Default values see User's Guide                                                                                                                                                                         | Light Signal<br>AAI<br>Measuring Sys<br>Movement                                                              |
| Define and Activate Limit Values                                                                                                                                                                        |                                                                                                               |
| Stylus check during CNC start<br>myrds_xxt_ph10_a_rds_xxt_a_Simulation                                                                                                                                  |                                                                                                               |
|                                                                                                                                                                                                         | el Apply                                                                                                      |

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:

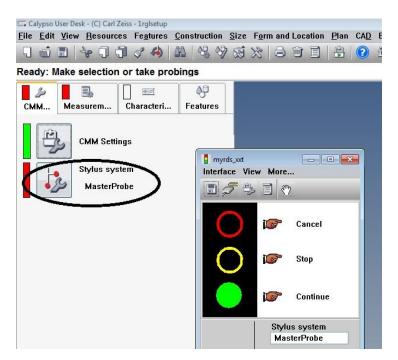
| Informat | ion 💌                                                        |
|----------|--------------------------------------------------------------|
| 0        | INFORMATION:<br>The MasterProbe will be created by type VAST |
| _        | ОК                                                           |

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

| Select Possible Components                                              | X |
|-------------------------------------------------------------------------|---|
| The following stylus system has to be uniquely assigned to a component: |   |
| MasterProbe                                                             |   |
| Please Select Correct Component                                         |   |
| XXT_Carrier                                                             |   |
| Add                                                                     |   |
| NOTE: If cancelled, the first entry in the list is applied as selection |   |
| OK Cancel                                                               |   |

Hit OK. No need to fill anything in.

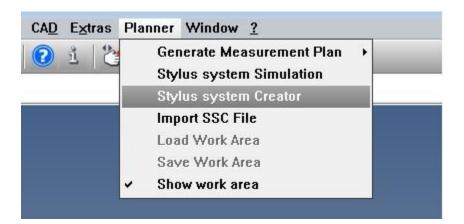
The next step is to do a virtual "Ref Sphere Position". Go to the STYLUS SYSTEMS button.



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.

| 12 00                                       | 2                                    | 2             | I I A→B                                                  | 1                                                                                       |
|---------------------------------------------|--------------------------------------|---------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------|
| tylus system                                |                                      | Mode          | Paran                                                    | neter                                                                                   |
| MasterProbe                                 |                                      | Qualify pas   | sive 🗸 Stan                                              | dard                                                                                    |
| Stylus name / i                             | no.                                  | Geometry      | Spher                                                    | re Coverage                                                                             |
| 1                                           | <b>~</b> 1                           | Sphere        | ▼ 180.0                                                  | 000                                                                                     |
| Fitting posi                                | _                                    | Change styl   |                                                          |                                                                                         |
|                                             |                                      | ,             |                                                          |                                                                                         |
|                                             |                                      |               | Reference                                                | sphere                                                                                  |
| Stylus<br>Name                              | Da                                   | te            | Reference<br>Sphere 1                                    |                                                                                         |
| Stylus                                      | Da                                   | te<br>1/10/12 |                                                          |                                                                                         |
| Stylus<br>Name                              | Da                                   |               | Sphere 1                                                 | ~                                                                                       |
| Stylus<br>Name<br>1                         |                                      |               | Sphere 1<br>Temp.                                        | 20.0000                                                                                 |
| Stylus<br>Name<br>1<br>R:                   | ).0000                               |               | Sphere 1<br>Temp.<br>SNo                                 | 20.0000<br>9999                                                                         |
| Stylus<br>Name<br>1<br>R:                   |                                      |               | Sphere 1<br>Temp.<br>SNo<br>Date                         | 20.0000           9999           10.1.2012                                              |
| Stylus<br>Name<br>1<br>R: (<br>S: (         | ).0000                               |               | Sphere 1<br>Temp.<br>SNo<br>Date<br>R:                   | 20.0000<br>9999<br>10.1.2012<br>15.0000                                                 |
| Stylus<br>Name<br>1<br>R: (<br>S: (<br>X: ( | ).0000<br>).0000<br>).0000           |               | Sphere 1<br>Temp.<br>SNo<br>Date<br>R:<br>S:             | 20.0000<br>9999<br>10.1.2012<br>15.0000<br>0.0000                                       |
| Stylus         Name           1             | ).0000<br>).0000<br>).0000<br>).0000 | 1/10/12       | Sphere 1<br>Temp.<br>SNo<br>Date<br>R:<br>S:<br>X:       | 20.0000<br>9999<br>10.1.2012<br>15.0000<br>0.0000<br>0.0000                             |
| Stylus         Name           1             | ).0000<br>).0000<br>).0000           |               | Sphere 1<br>Temp.<br>SNo<br>Date<br>R:<br>S:<br>X:<br>Y: | 20.0000       9999       10.1.2012       15.0000       0.0000       0.0000       0.0000 |

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



#### New stylus system

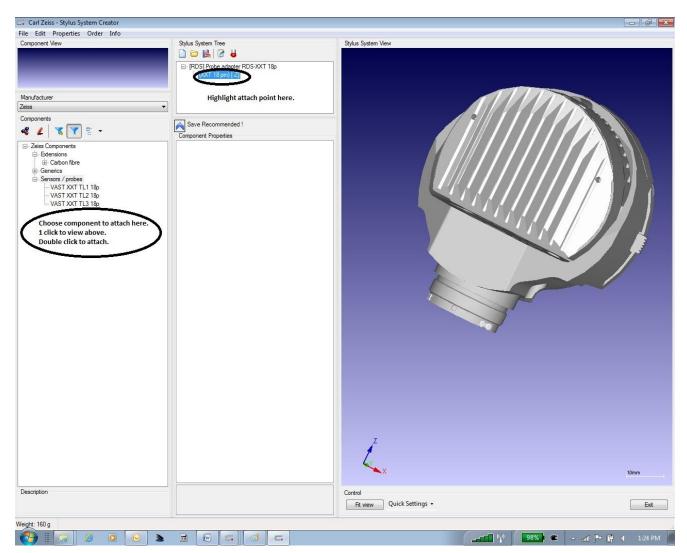


## Select the correct type of probe.

| Please select a technol<br>s to be based.              | ogy on which | your stylus system |
|--------------------------------------------------------|--------------|--------------------|
| CSC<br>DSE-RST<br>None<br>PH10<br>RDS RST<br>RDS TP200 |              |                    |
| RDS XXT<br>VAST                                        |              |                    |
|                                                        |              |                    |
| Selected Technology:                                   | RDS XXT      |                    |

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                                                                                                                                                                                 |                                  | Stylus System Tree                              |                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------|---------------------------------|
|                                                                                                                                                                                                |                                  |                                                 |                                 |
|                                                                                                                                                                                                |                                  | D IPD State of other P                          | DC VVT 10-                      |
|                                                                                                                                                                                                |                                  | □- [RDS] Probe adapter R<br>□- VAST XXT TL3 18p |                                 |
|                                                                                                                                                                                                |                                  | MasterProbe X                                   |                                 |
|                                                                                                                                                                                                |                                  |                                                 |                                 |
| Manufacturer                                                                                                                                                                                   |                                  |                                                 |                                 |
| Zeiss                                                                                                                                                                                          |                                  | <ul> <li>Main Axis Angle: 0.00</li> </ul>       |                                 |
| Components                                                                                                                                                                                     |                                  |                                                 |                                 |
| 📲 🗶 🕱 🟹 🖭 🗸                                                                                                                                                                                    |                                  | Save Recommended !                              |                                 |
|                                                                                                                                                                                                |                                  | Component Properties                            |                                 |
| ⊡ · Zeiss Components<br>                                                                                                                                                                       |                                  | Carl Zeiss Webshop:                             | Order this component            |
|                                                                                                                                                                                                |                                  | Description                                     |                                 |
|                                                                                                                                                                                                |                                  | Category                                        | Master probes                   |
|                                                                                                                                                                                                |                                  | Collection Name                                 | XXT                             |
|                                                                                                                                                                                                |                                  | Manufacturer                                    | Zeiss                           |
|                                                                                                                                                                                                |                                  | Name<br>Name                                    | MasterProbe XXT TL3             |
|                                                                                                                                                                                                |                                  | Name Scheme<br>Order Number                     | Sensors<br>master probe XXT TL3 |
|                                                                                                                                                                                                |                                  | Vendor Order Number                             | Unknown                         |
|                                                                                                                                                                                                |                                  | E Functional Properties                         | ORNOWIT                         |
|                                                                                                                                                                                                |                                  | Load Limit                                      | 0                               |
|                                                                                                                                                                                                |                                  | Material                                        | Unknown                         |
|                                                                                                                                                                                                |                                  | Weight                                          | 5.6                             |
| Stylus System Pro<br>Properties         Name:         Serial Number:         Constructor:         Date:         Workpiece:         CMM:         Company:         Department:         Comments: | MasterProbe           01/10/2012 | Preview<br>Today                                |                                 |
| Compatible with \                                                                                                                                                                              | /ersion 2.0                      | 2                                               | -                               |

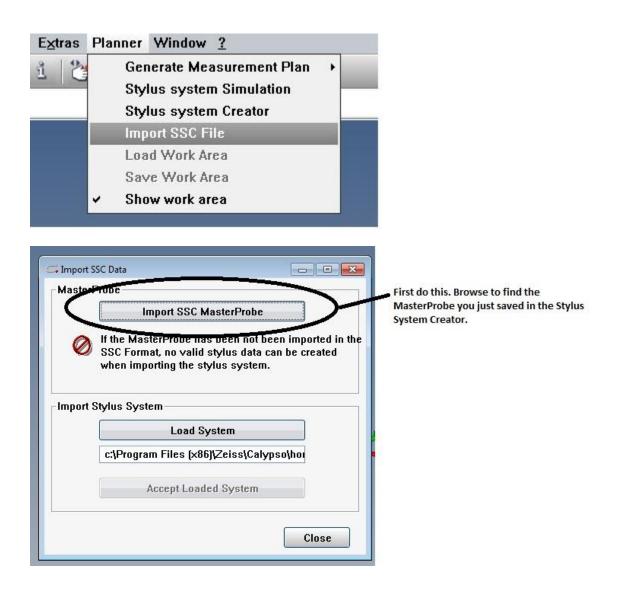
You must name the probe in the screen above, then name it again when the save as screen pops up. PAY ATTENTION TO WHERE YOU'RE PUTTING YOUR SIMULATION PROBES! If you're setting up more than one machine tab for different CMM configurations, you'll want a MasterProbe for each different setup. It's recommended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

| Stylus System Tree                                                                                                                                                                                                         |                                                                                                                                                                                                                                  | Stylus System View - 2by61                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 🗋 🗁 🛃 📝 👹                                                                                                                                                                                                                  |                                                                                                                                                                                                                                  | ta laalalalaa ka k |
| and the second                                                                                                           | DDC VXT 10-                                                                                                                                                                                                                      |                                                     |
| [RDS] Probe adapte     VAST XXT TL3                                                                                                                                                                                        |                                                                                                                                                                                                                                  |                                                     |
|                                                                                                                                                                                                                            | XT TL3 adapter plate                                                                                                                                                                                                             |                                                     |
|                                                                                                                                                                                                                            | T] Extension L 30 Ø5                                                                                                                                                                                                             |                                                     |
| [MJ XX                                                                                                                                                                                                                     | XXT] DK 2 ML 31 Stylus Silicon nitride                                                                                                                                                                                           |                                                     |
| Ino                                                                                                                                                                                                                        | verij bite nie er oljide olieorrikide                                                                                                                                                                                            |                                                     |
|                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |                                                     |
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|                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |                                                     |
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| 4                                                                                                                                                                                                                          | + III                                                                                                                                                                                                                            |                                                     |
|                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |                                                     |
|                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |                                                     |
| Main Axis Angle: 0.00                                                                                                                                                                                                      |                                                                                                                                                                                                                                  |                                                     |
|                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |                                                     |
| Main Axis Angle: 0.00                                                                                                                                                                                                      |                                                                                                                                                                                                                                  |                                                     |
|                                                                                                                                                                                                                            | ¢.                                                                                                                                                                                                                               |                                                     |
| Main Axis Angle: 0.00                                                                                                                                                                                                      |                                                                                                                                                                                                                                  |                                                     |
| Main Axis Angle: 0.00                                                                                                                                                                                                      | pp: Order this component                                                                                                                                                                                                         |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshu Catalog Data                                                                                                                                                  | op: Order this component                                                                                                                                                                                                         |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Websho Catalog Data DG                                                                                                                                               | pp: Order this component                                                                                                                                                                                                         |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshe Catalog Data DG DK                                                                                                                                            | pp: Order this component                                                                                                                                                                                                         |                                                     |
| Main Axis Angle: 0.00<br>Component Properties<br>Carl Zeiss Webshu<br>Carl Zeiss Webshu<br>Carl Des<br>Des<br>Des                                                                                                          | pp: Order this component<br>5<br>2<br>1.5                                                                                                                                                                                        |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshe Catalog Data DG DK DS L                                                                                                                                       | pp: Order this component<br>5<br>2<br>1.5<br>40                                                                                                                                                                                  |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshe Catalog Data DG DK DG L ML                                                                                                                                    | pp: Order this component<br>5<br>2<br>1.5                                                                                                                                                                                        |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshe Catalog Data DG DK DS L ML DS DS L ML Description                                                                                                             | 5<br>2<br>1.5<br>40<br>31                                                                                                                                                                                                        |                                                     |
| Main Axis Angle: 0.00<br>Component Properties<br>Carl Zeiss Webshu<br>Carl Zeiss Webshu<br>Carl Des<br>DK<br>DS<br>L<br>ML<br>Description<br>Category                                                                      | 5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4                                                                                                                                                                                        |                                                     |
| Main Axis Angle: 0.00<br>Component Properties<br>Carl Zeiss Webshu<br>Catalog Data<br>DG<br>DK<br>DS<br>L<br>ML<br>Description<br>Category<br>Collection Name                                                              | p: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT                                                                                                                                                   |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshe Catalog Data DG DK DS L ML DS L ML Category Callection Name Manufacturer                                                                                      | p: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss                                                                                                                                          |                                                     |
| Main Axis Angle: 0.00 Component Properties Catalog Data DG DK DG L ML Description Category Collection Name Manufacturer Name                                                                                               | pp: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss<br>Stytus                                                                                                                               |                                                     |
| Main Axis Angle: 0.00<br>Component Properties<br>Carl Zeiss Websho<br>Catalog Data<br>DG<br>DK<br>DS<br>L<br>ML<br>DS<br>Category<br>Collection Name<br>Manufacturer<br>Name<br>Name<br>Name Scheme                        | pp: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss<br>Stytus<br>Stytus<br>Stytus                                                                                                           |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshu Catalog Data DG DK DS L ML DS L ML DS Category Collection Name Manufacturer Name Scheme Order Number                                                          | pp: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss<br>Stylus<br>Stylus<br>626113-0203-040                                                                                                  |                                                     |
| Main Axis Angle: 0.00 Component Properties Carl Zeiss Webshe Catalog Data DG DK DS L ML Catagory Collection Name Manufacturer Name Name Scheme Order Number Vendor Order Number                                            | 5         2           1.5         40           31         0           DK 2.0 - 2.4         M3 XXT           Zeiss         Stylus           Stylus         Stylus           626113-0203-040         0           r         Unknown |                                                     |
| Main Axis Angle: 0.00 Component Properties Catalog Data DG DK DS L ML Cescription Category Collection Name Manufacturer Name Name Scheme Order Number Vendor Order Number Functional Propertie                             | pp: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss<br>Stylus<br>Stylus<br>Stylus<br>626113-0203-040<br>r<br>Unknown                                                                        |                                                     |
| Main Axis Angle: 0.00 Component Properties Component Properties Carl Zeiss Webshe Catalog Data DG DK DS L ML DS L ML DS Category Collection Name Manufacturer Name Name Scheme Order Number Vendor Order Number Load Limit | pp: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss<br>Stylus<br>Stylus<br>Stylus<br>626113-0203-040<br>r<br>Unknown<br>33<br>0                                                             |                                                     |
| Main Axis Angle: 0.00 Component Properties Catalog Data DG DK DS L ML Cescription Category Collection Name Manufacturer Name Name Scheme Order Number Vendor Order Number Functional Propertie                             | pp: Order this component<br>5<br>2<br>1.5<br>40<br>31<br>DK 2.0 - 2.4<br>M3 XXT<br>Zeiss<br>Stylus<br>Stylus<br>Stylus<br>626113-0203-040<br>r<br>Unknown                                                                        |                                                     |

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.



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.

| Import S | SC Data                                                               |                  |                                 |
|----------|-----------------------------------------------------------------------|------------------|---------------------------------|
| MasterF  | Probe                                                                 |                  |                                 |
|          | Import SSC MasterProbe                                                |                  |                                 |
| ~        | No valid stylus data can be created when importing the stylus system. |                  |                                 |
| Import S | Load System                                                           | Now load anothe  | r stylus system to use for your |
|          | C:\Users\emicheln\Uesktop\MY SIMULAT                                  |                  |                                 |
|          | Accept Loaded System                                                  | Then accept load | led system!                     |
|          | Close                                                                 |                  |                                 |
|          | ····                                                                  |                  |                                 |

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

| robe              |                          |            |
|-------------------|--------------------------|------------|
| ¢хт               | ~                        |            |
| Zeiss incremental | probe holder             |            |
|                   | XXT_Carrier              | ~          |
|                   |                          | Add        |
| Aodule 🔀          |                          | Add        |
| Stylus system     | 2by61                    | V 🗆 RDSCAA |
|                   | down<br>Name it then hit | Stylus no. |
|                   | . /                      |            |

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:

| СММ | Aeasurem                              | ) 🗐 🔗<br>Characteri Features                                                        | 3                                                               |                                                                 |
|-----|---------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
|     | CMM Settings<br>Stylus system<br>3×40 | n<br>Stylus system S<br>Stylus system<br>Stylus system<br>3×40<br>Stylus name / no. | tylus Managemen<br>Mode<br>Qualify pass<br>Geometry<br>1 Sphere | Parameter<br>sive V Standard V<br>Sphere Coverage<br>V 180.0000 |

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

| -       | ion Styli list |     |          | tings  |        |
|---------|----------------|-----|----------|--------|--------|
|         |                |     | t) 🚺     | T      | ¥.     |
| New sty | /lus system    |     |          |        |        |
| Name    | 3×40           |     |          |        | ~      |
| Max.    | Opening Angle  | 1   | 80.0     |        | legree |
| s       | tylus name     | No. | A (degra | B [deg | re 🔼   |
|         | down           | 1   | 0.0      | 0.0    |        |
|         |                |     |          |        |        |
|         |                |     |          |        |        |

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:

| CRC Lis |                                               |               |                          |                         |                    |
|---------|-----------------------------------------------|---------------|--------------------------|-------------------------|--------------------|
| RC po   | sition Styli list                             |               |                          | tings                   |                    |
| Nar     | stylus system—<br>ne 3×40<br><. Opening Angle | 1             | 80.0                     | de                      | <b>v</b><br>egrees |
|         | Stylus name<br>down<br>north                  | No.<br>1<br>2 | A [degre<br>0.0<br>-90.0 | B (degra<br>0.0<br>90.0 | <u>~</u>           |
|         | east<br>south<br>west                         | 3<br>4<br>5   | 0.0<br>90.0<br>0.0       | 90.0<br>90.0<br>-90.0   |                    |
| <       | **                                            |               |                          | >                       | ×                  |
|         |                                               |               |                          | Clo                     | se                 |

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

|      |             | 2           |
|------|-------------|-------------|
|      |             |             |
| 3×40 | _           | ~           |
|      |             |             |
|      | dists<br>40 | dists<br>40 |

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

| New stylus | Original Stylus | 1 |
|------------|-----------------|---|
| south      | down            |   |
| north      | down            |   |
| west       | down            |   |
| east       | down            |   |
|            |                 | _ |

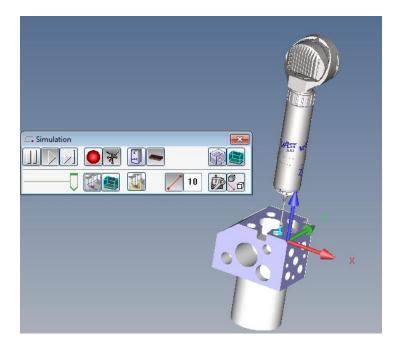
Save your updated stylus system list.

| RC Lis |                           |           |               |                          |                |
|--------|---------------------------|-----------|---------------|--------------------------|----------------|
| RC po  | sition S                  | tyli list | Sta           | tus Set                  | tings          |
|        |                           |           | ٦Ē            | 1                        | 7 🔒 🚀          |
| New    | stylus sy                 | -         |               |                          |                |
| Nar    |                           | 3×40      |               |                          | ~              |
|        |                           |           |               |                          |                |
| Max    | x. Openin                 | a Angle   | 1             | 80.0                     | degrees        |
| Max    | ×. Openin                 | g Angle   |               |                          |                |
| Ma     | ×. Openin<br>Stylus n     |           |               |                          | degrees        |
| Max    | -                         |           |               |                          |                |
| Max    | Stylus n                  |           | No            | A (degre                 | B [degr        |
| Max    | Stylus n<br>down          |           | No<br>1       | A [degra                 | B [degrission] |
| Max    | Stylus n<br>down<br>north |           | No.<br>1<br>2 | A [degra<br>0.0<br>-90.0 | B [degr        |

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

To run your program in the SIMULATION MODE:

## PLANNER/STYLUS SYSTEM SIMULATION

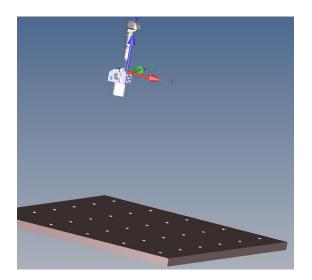


Run your program using the usual Calypso run button on main toolbar. The Simulation toolbar allows you to modify your view of the run as follows:



- 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.

| AD-Entity                                                           |                     |                                  |
|---------------------------------------------------------------------|---------------------|----------------------------------|
| Edit body                                                           |                     |                                  |
| Edit Hie                                                            | erarchy Transformat | ion Positioning                  |
| Translation                                                         | 1                   |                                  |
| ×                                                                   | 0.0000              | Apply                            |
| Y                                                                   | 0.0000              | Сору                             |
| z                                                                   | 0.0000              |                                  |
| X<br>Y<br>Z                                                         |                     |                                  |
| Rotation                                                            |                     |                                  |
| Space Axis                                                          | s Z 🔽               | Apply                            |
| Angle                                                               | 0.0000              | Сору                             |
|                                                                     |                     |                                  |
| Center                                                              |                     |                                  |
| Positioning                                                         |                     | Basilian                         |
| Positioning<br>Target (                                             |                     | Position                         |
| Positioning<br>Target (<br>Point                                    | Two Points          | O Three Points                   |
| Positioning<br>Target (<br>Point                                    |                     |                                  |
| Positioning<br>Target (<br>Point                                    | Two Points          | O Three Points                   |
| Positioning<br>Target (<br>Point<br>Three F<br>Center               | Two Points          | O Three Points<br>0.001          |
| Positioning<br>Target (<br>Point<br>Three F<br>Center<br>Base Align | Two Points          | O Three Points<br>0.001<br>Apply |
| Positioning<br>Target (<br>Point<br>Three F<br>Center<br>Base Align | Two Points          | O Three Points 0.001 Apply Copy  |
| Positioning<br>Target (<br>Point<br>Three F<br>Center<br>Base Align | Two Points          | O Three Points<br>0.001<br>Apply |

#### ADDENDUM:

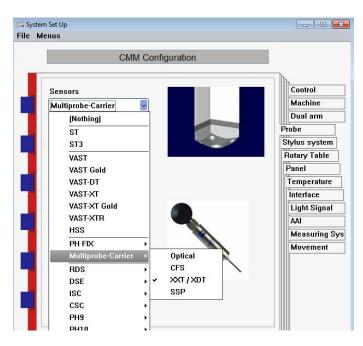
Machine tab setup parameters for other common configurations:

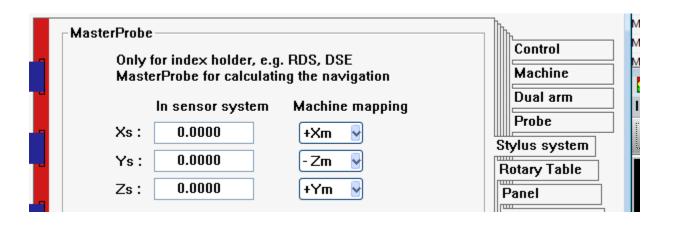
## 1. PH10 with TP20:

| CMN                                                                                                                                                                  | I Conf | guration                    |                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ensors (Nothing) (Nothing) ST ST ST VAST VAST VAST VAST VAST-VT VAST-XT VAST-XT VAST-XT VAST-XT R HSS PH FIX Multiprobe-Carrier RDS DSE ISC CSC PH9 PH10 PH10M RTP20 |        | RST<br>Renishaw TPx<br>TP20 | Control<br>Machine<br>Dual arm<br>Probe<br>Stylus system<br>Rotary Table<br>Panel<br>Temperature<br>Interface<br>Light Signal<br>Ääl<br>Measuring Sys<br>Movement |
| MIH-S<br>MIH                                                                                                                                                         | •      | TP200<br>XXT / XDT<br>SP25  | Cancel Apply                                                                                                                                                      |

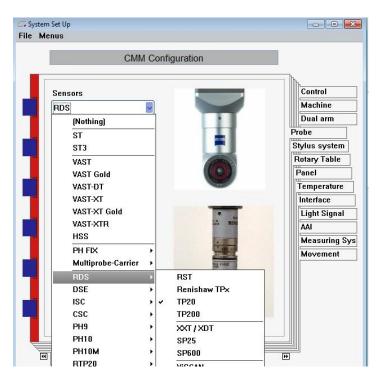
| Only for index holder o g                                    |                          | Control       |
|--------------------------------------------------------------|--------------------------|---------------|
| Only for index holder, e.g. F<br>MasterProbe for calculating |                          | Machine       |
|                                                              | -                        | Dual arm      |
| In sensor system<br>Xs : 0.0000                              | Machine mapping<br>+Xm 😡 | Probe         |
| Ys: 0.0000                                                   | -Ym V                    | Stylus syster |
|                                                              |                          | Rotary Table  |
| Zs: 83.0000                                                  | - Zm 🖌                   | Panel         |

#### 2. Duramax





### 3. RDS-TP20



| С | MM Configuration   |                                                                                   |
|---|--------------------|-----------------------------------------------------------------------------------|
|   | ) +Xm ♥<br>0 -Ym ♥ | Control<br>Machine<br>Dual arm<br>Probe<br>Stylus system<br>Rotary Table<br>Panel |