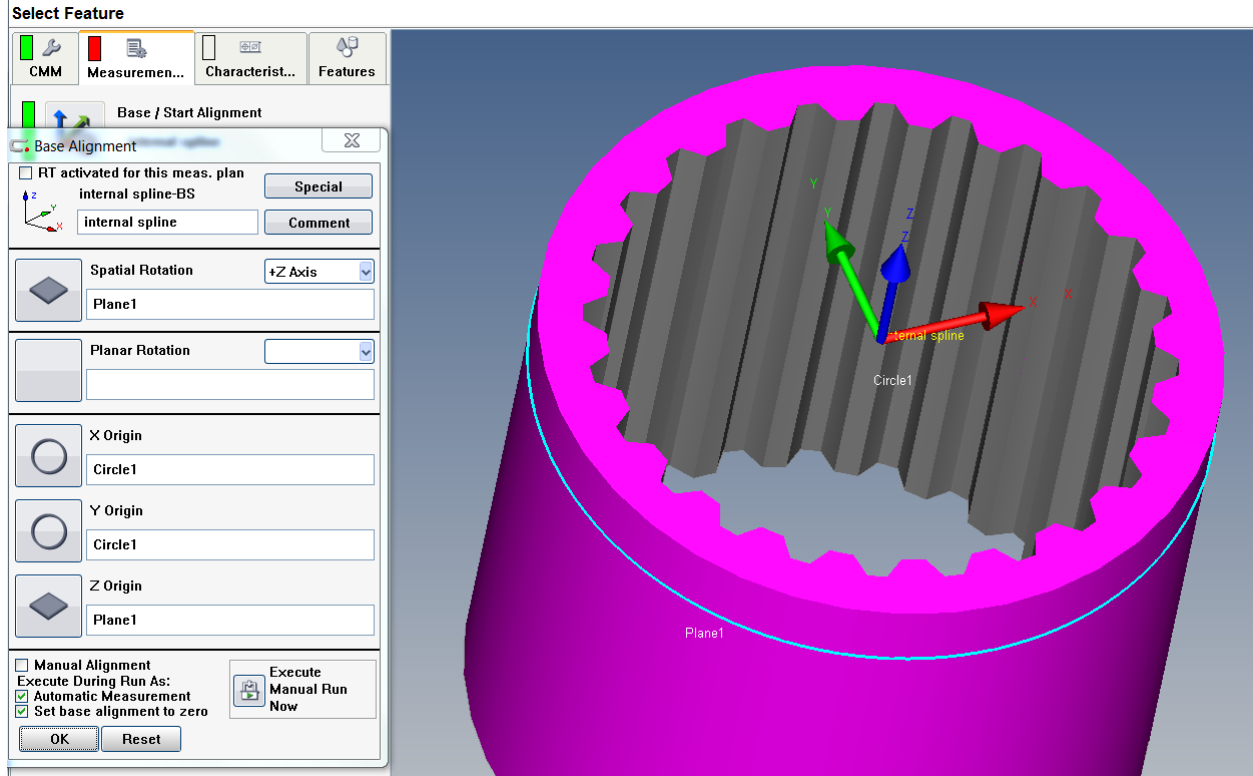
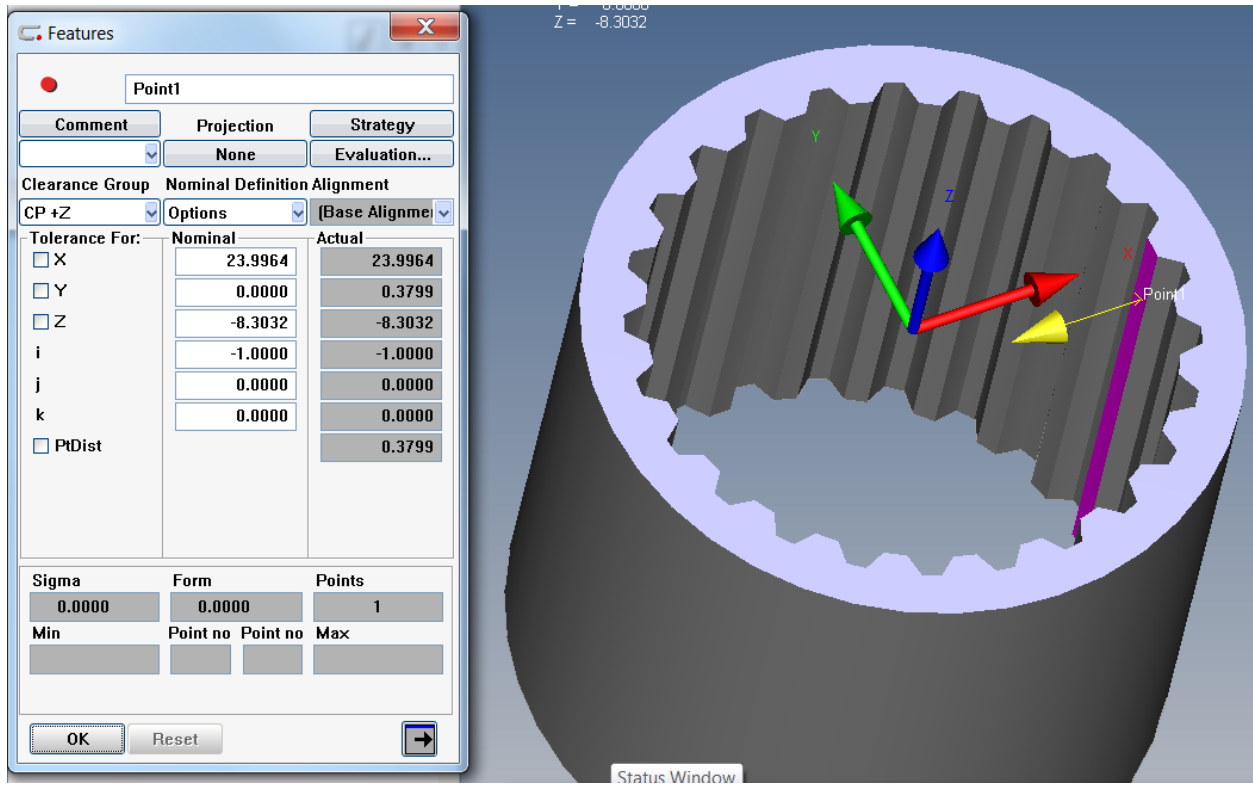


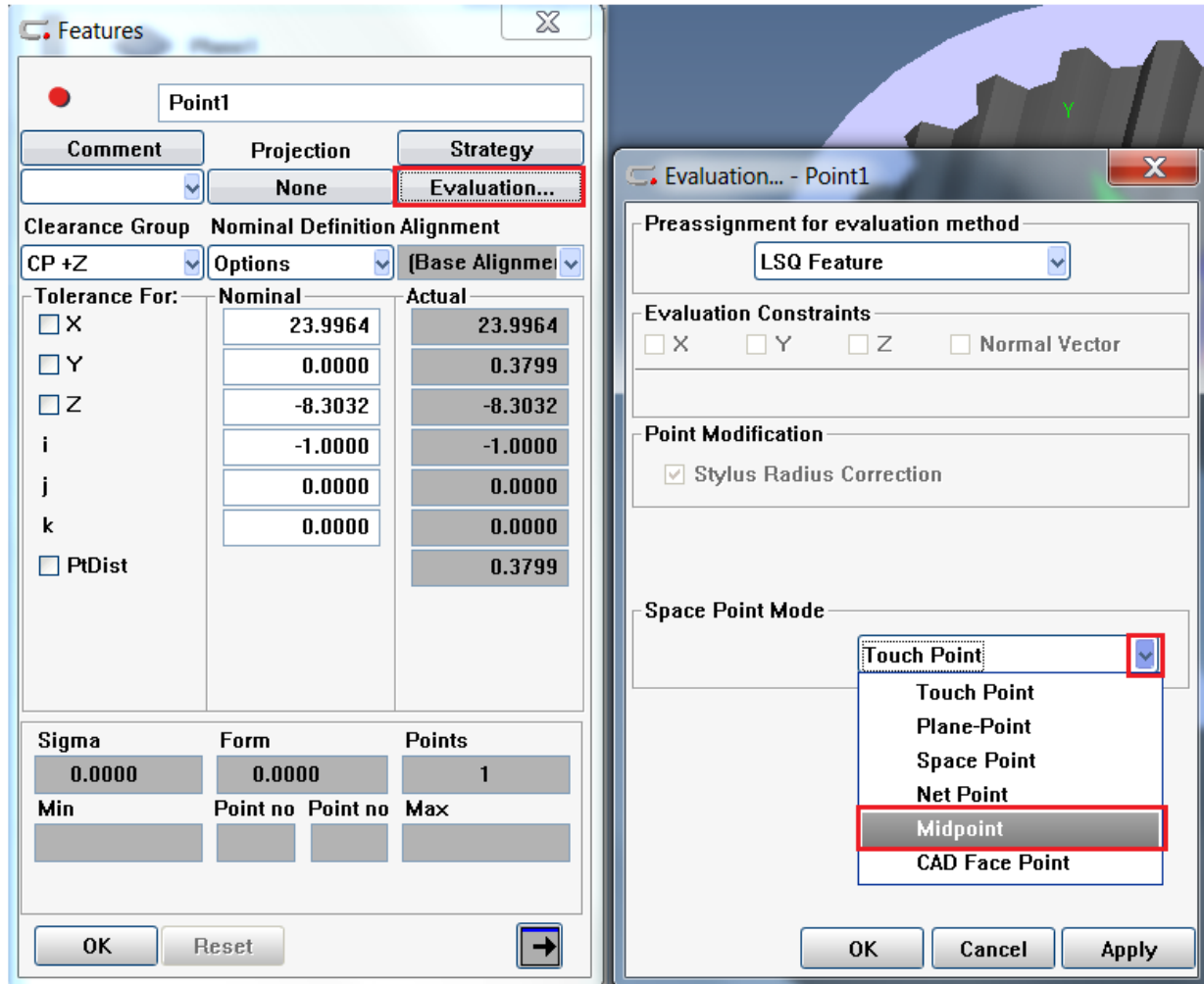
Clocking the Gap of a spline


First create a simple Base Alignment



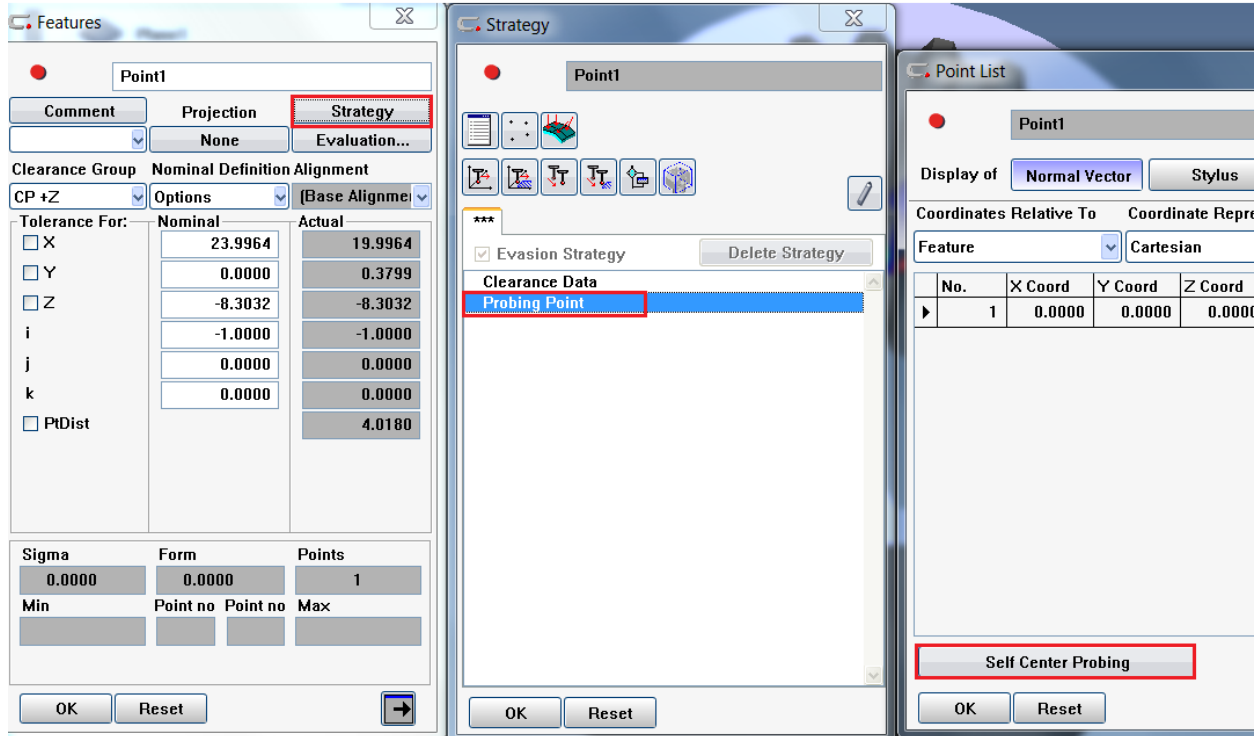


Create a point in the + X direction adjust the Y value to zero



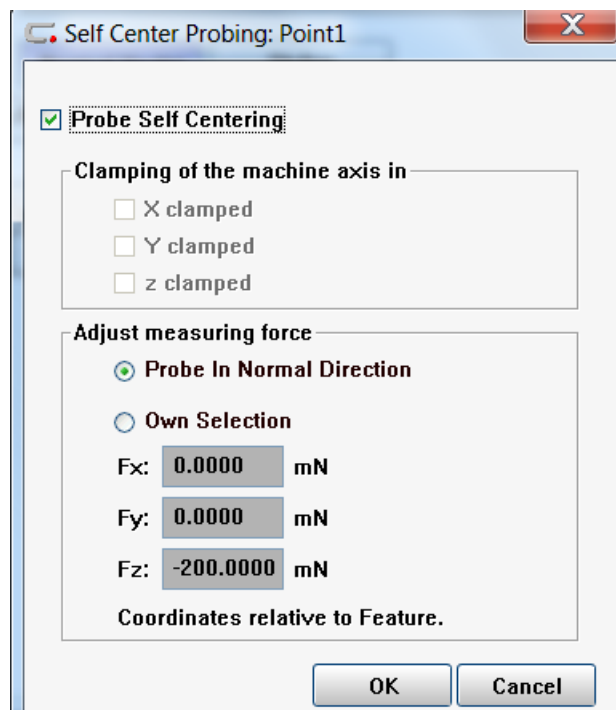
Open the Point go into **Evaluation** then select the down arrow  in the **Space Point Mode** area

Then Select **Midpoint**

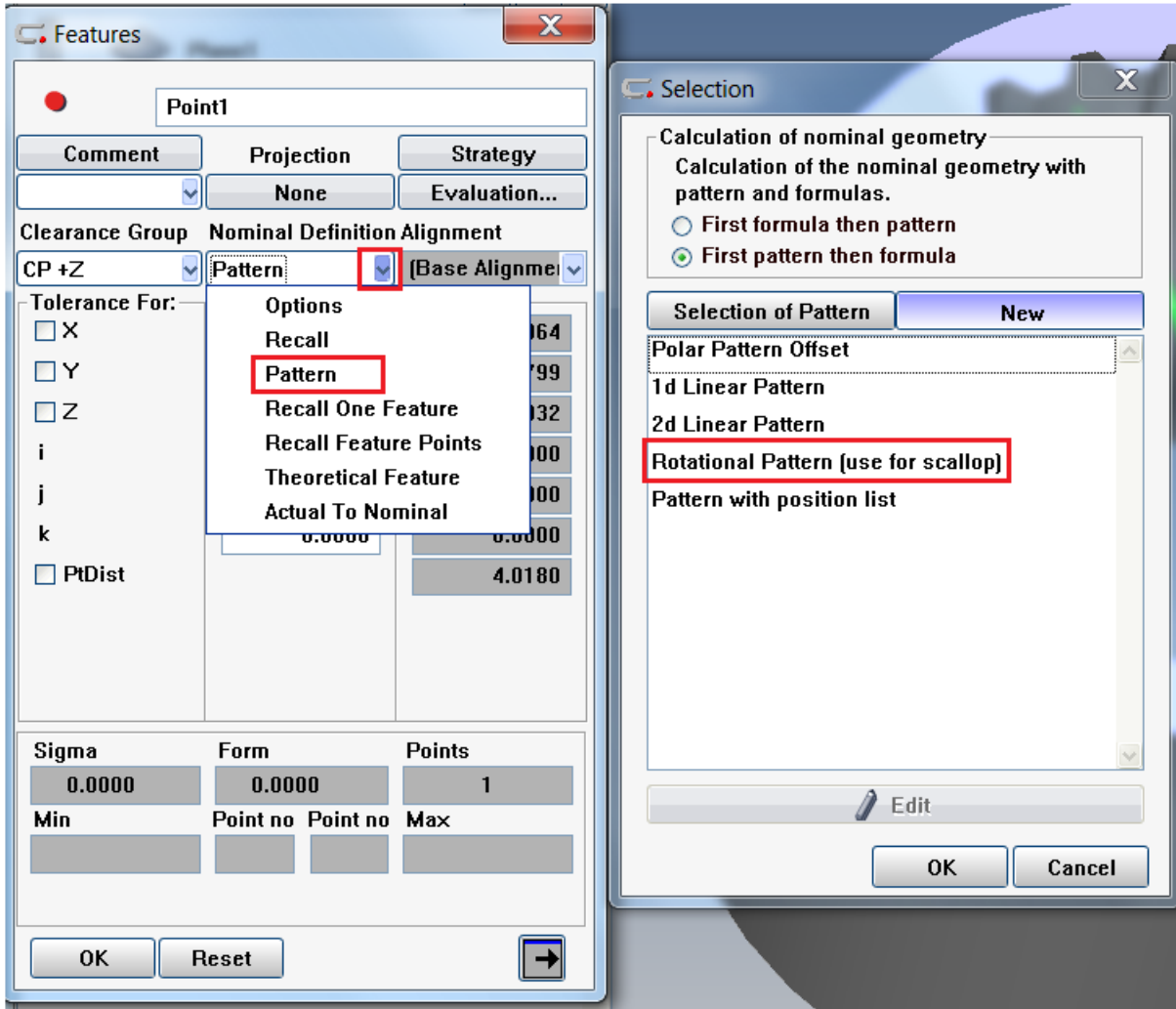


With the point still open select **Strategy** the highlight the **Probing Point** and double click

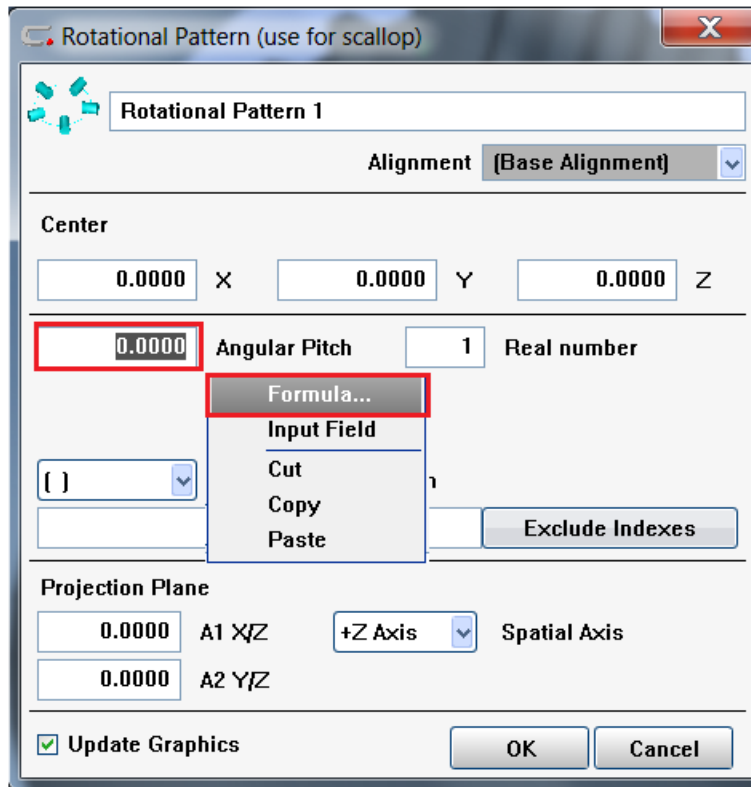
Now select the **Self Center Probing** tab



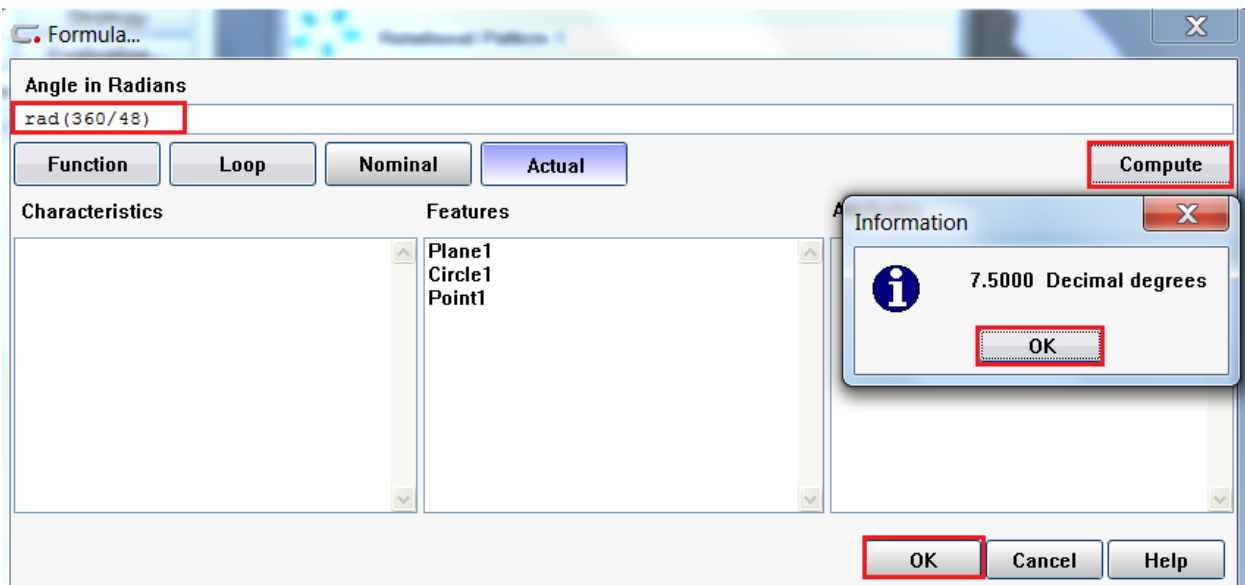
Put a check in the box at Probe Self Centering and select OK



☑ select the blue down arrow then **Pattern** then **Rotational Pattern (use for scallops)**

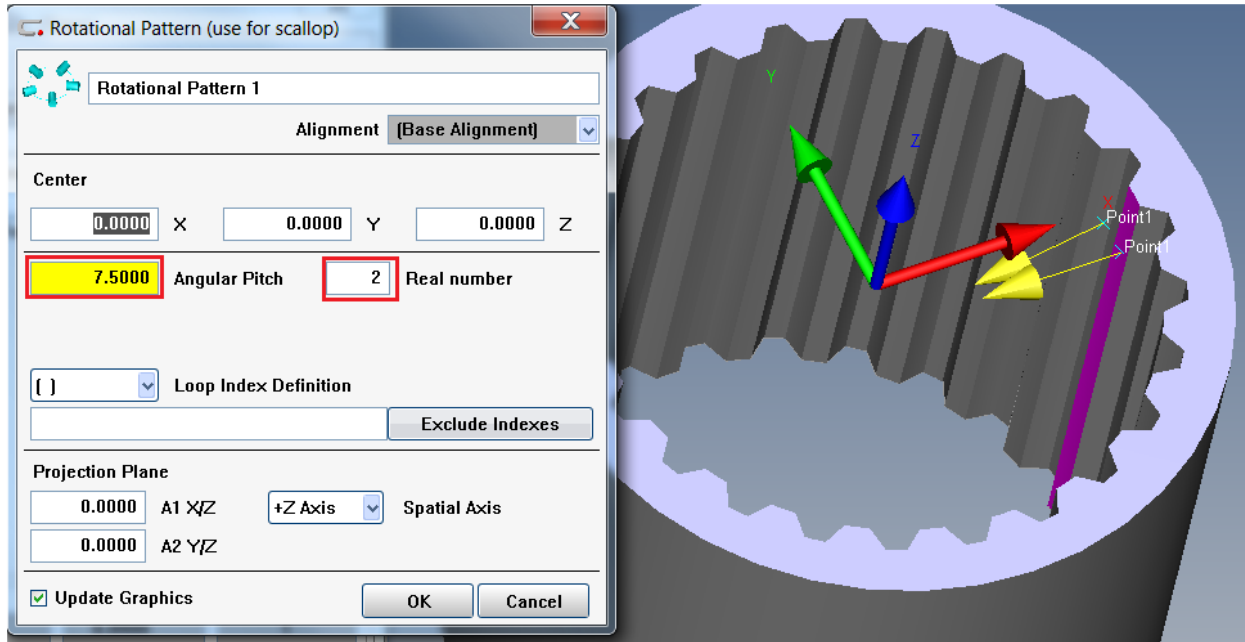


Highlight the area to the left of **Angular Pitch** and right mouse click and select **Formula**

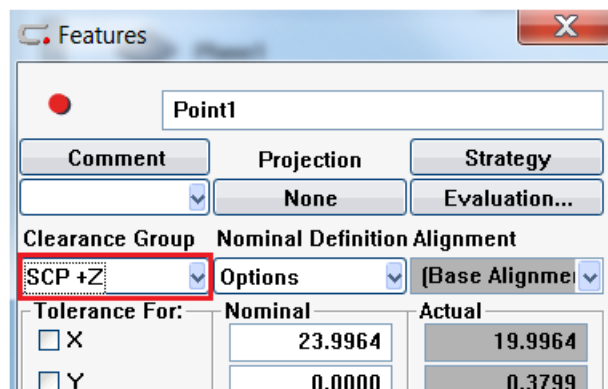


Type in the above formula $\text{rad}(360/48)$

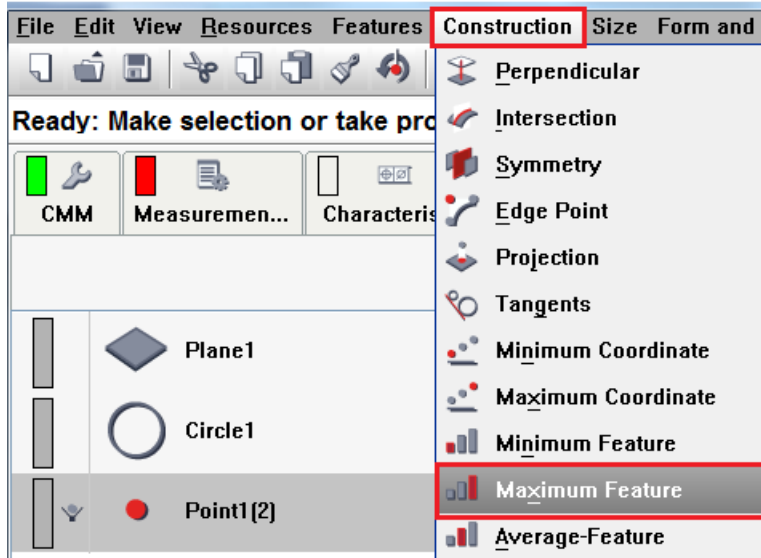
48 is double the number of gaps 24 for this spline



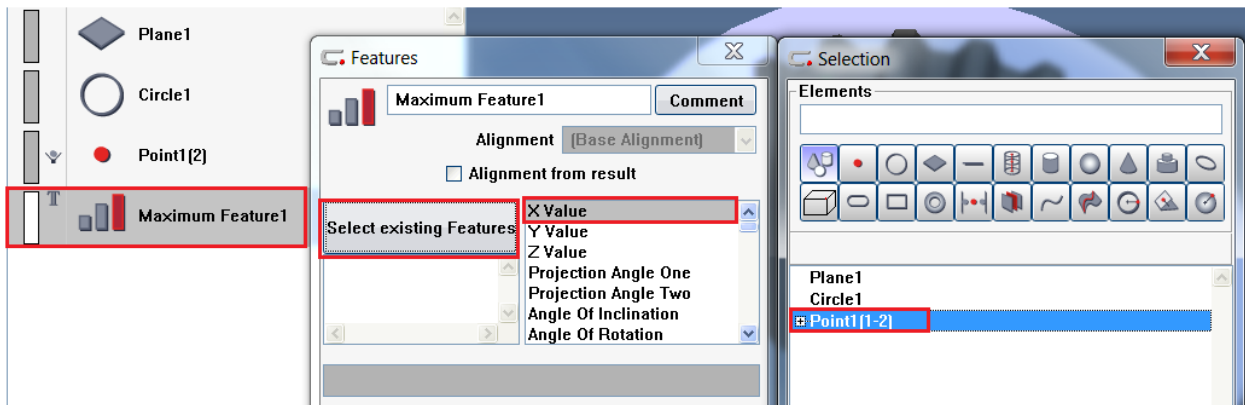
Place the number 2 in the box to the left of Real number



If you change the Clearance Group to SCP +Z this will stop the probe from retracting to the parent clearance plane

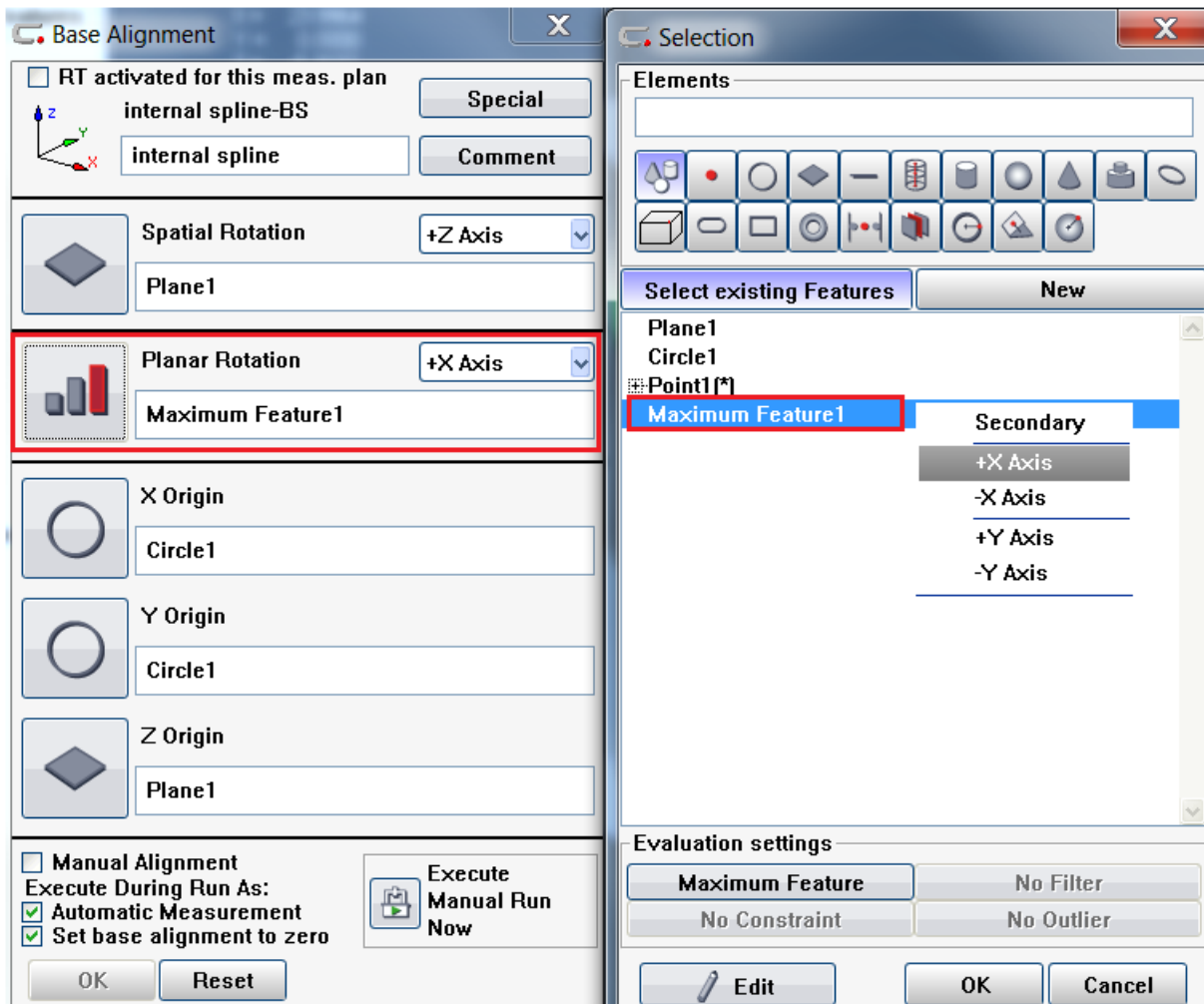


Select **Construction** then **Maximum Feature**



Open the Maximum Feature highlight the **X Value** and then **Select existing Features**

Then select the **Point1(1-2)**

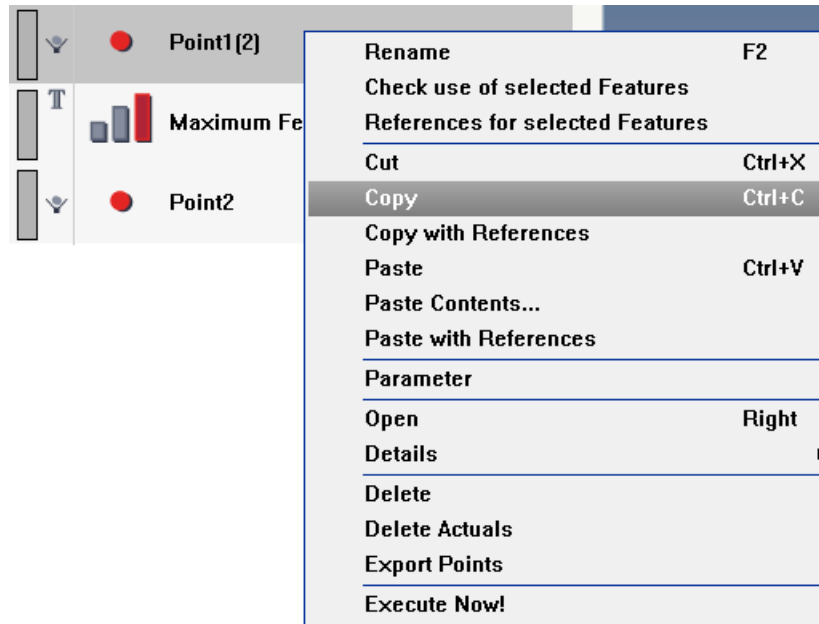


Reopen the Base Alignment and place the Maximum Feature into the Planar Rotation.

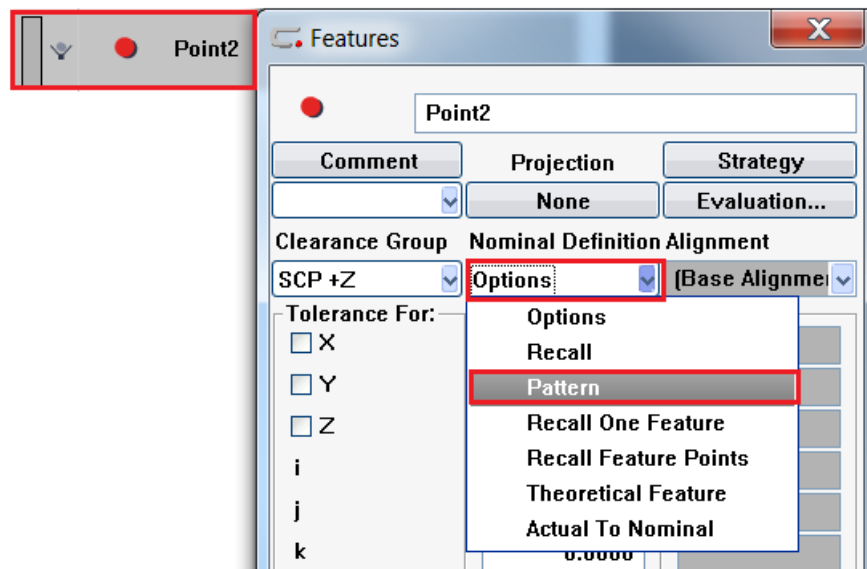
This routine can be used for both internal and external splines and spur gears.

Depending on which axis you use for the clocking you may need to use the Minimum Feature rather than the Maximum Feature same is true with the internal and external spline or spur gear.

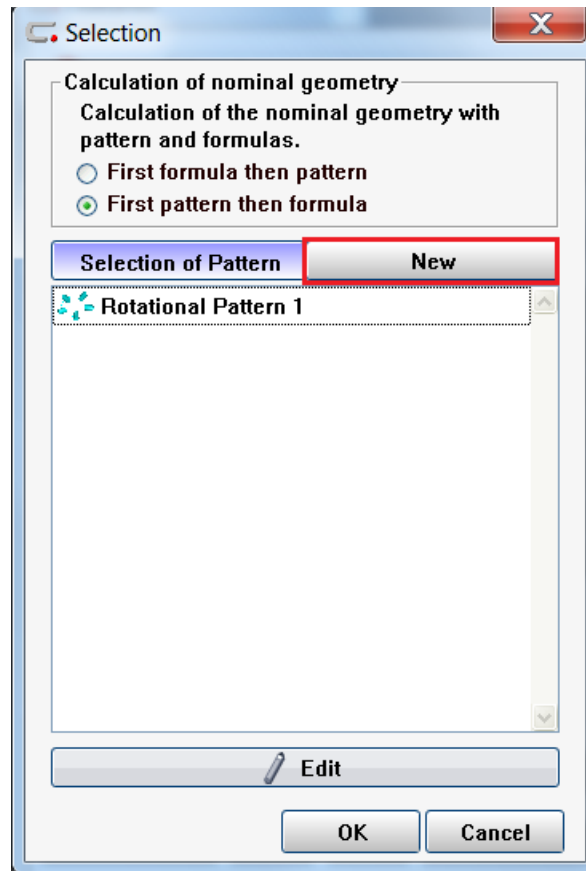
Creating a datum from the theoretical pitch diameter



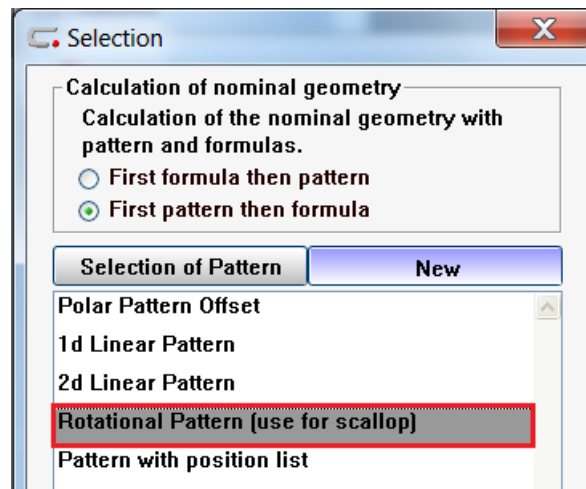
Copy the points used for the clocking of the gap.



Open the new point select **Options** then **Pattern**



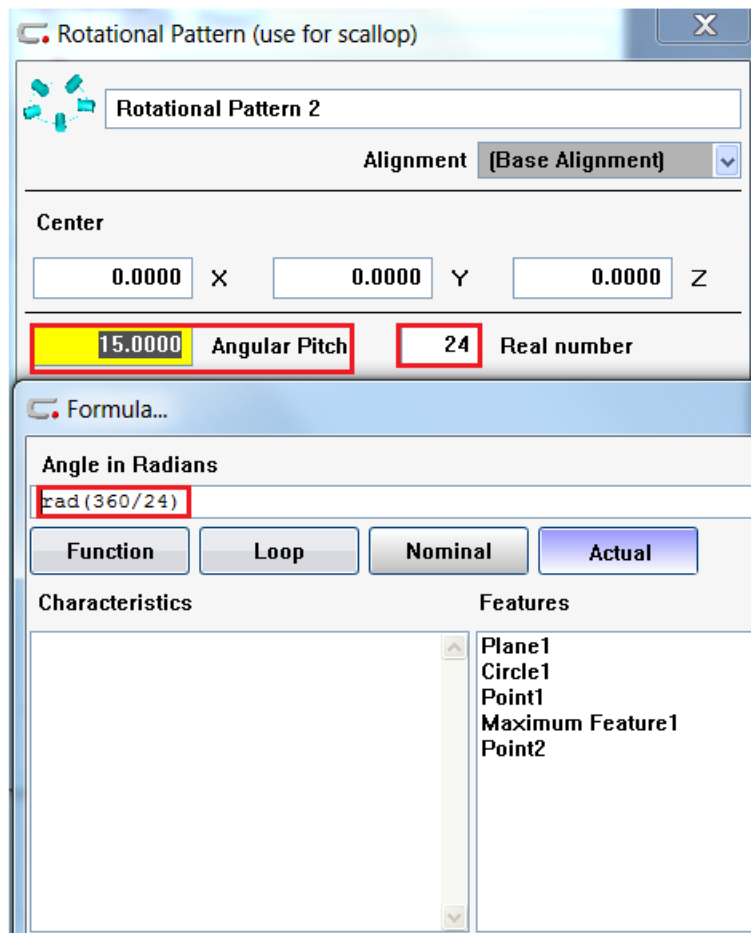
Select **New**



Select **Rotational Pattern (use for Scallop)**

Type in the above formula $\text{rad}(360/48)$

48 is double the number of gaps 24 for this spline



Right mouse click in the **Angular Pitch** window then select Formula

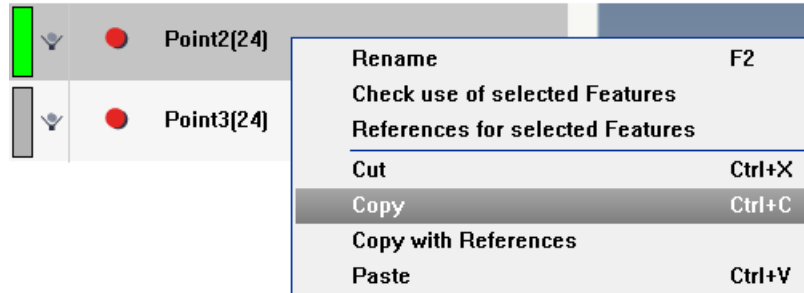
Type $\text{rad}(360/24)$ into the Formula window

24 is the number of teeth or gaps

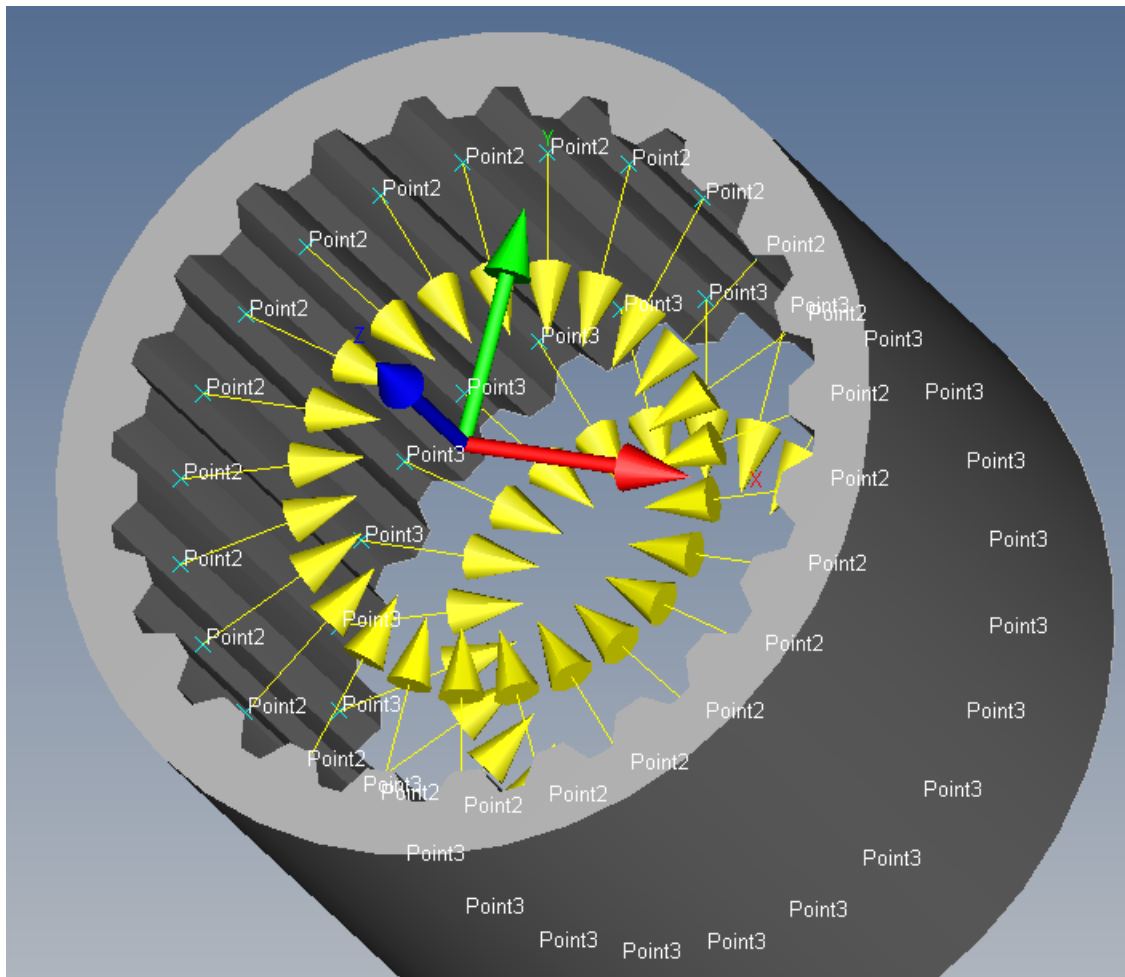
Also type 24 into the Real number fielded

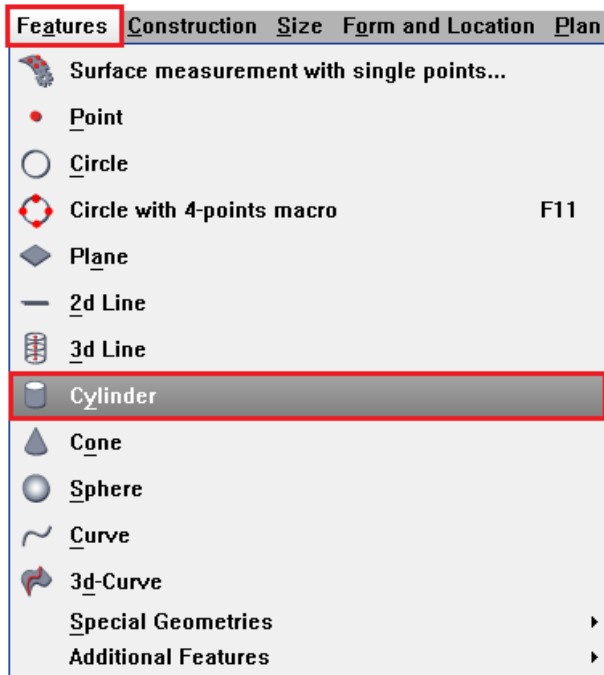


If you are using a rotary table you could also select **Rotate rotary table as well**

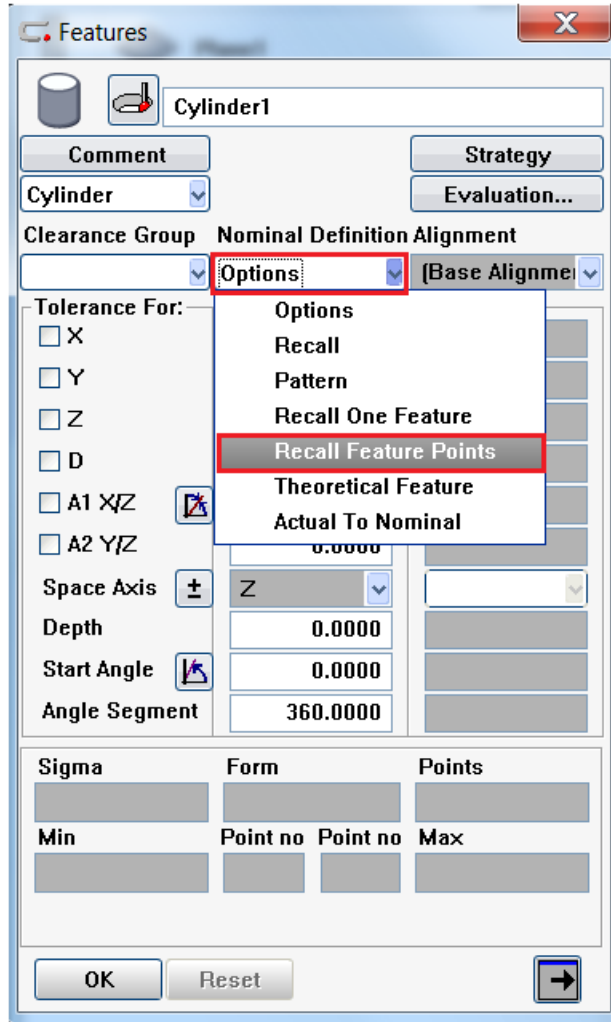


Copy and paste the new pattern Point then open the new one and change the Z nominal

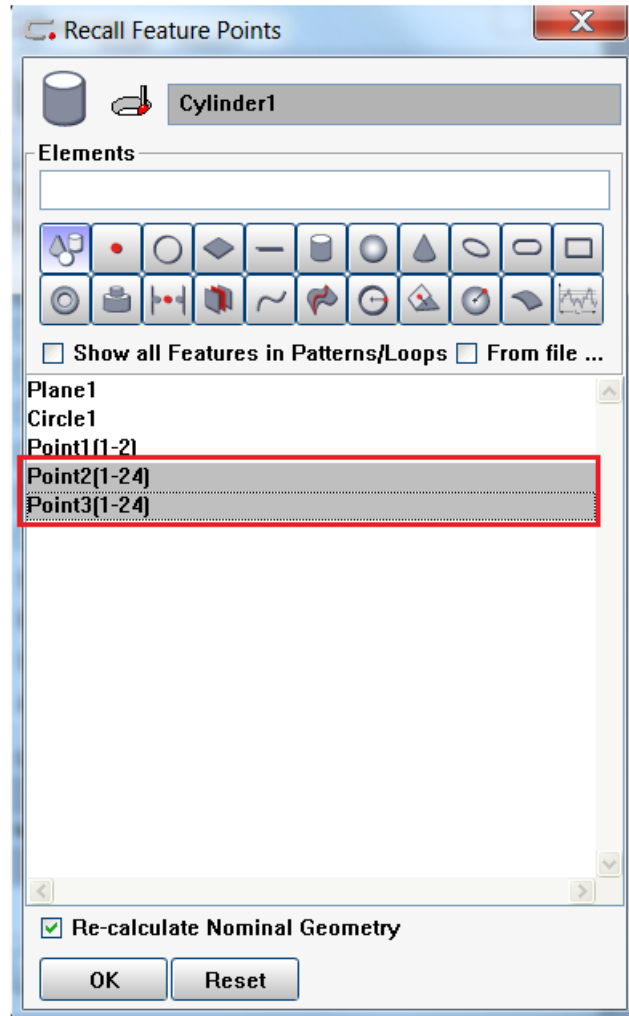




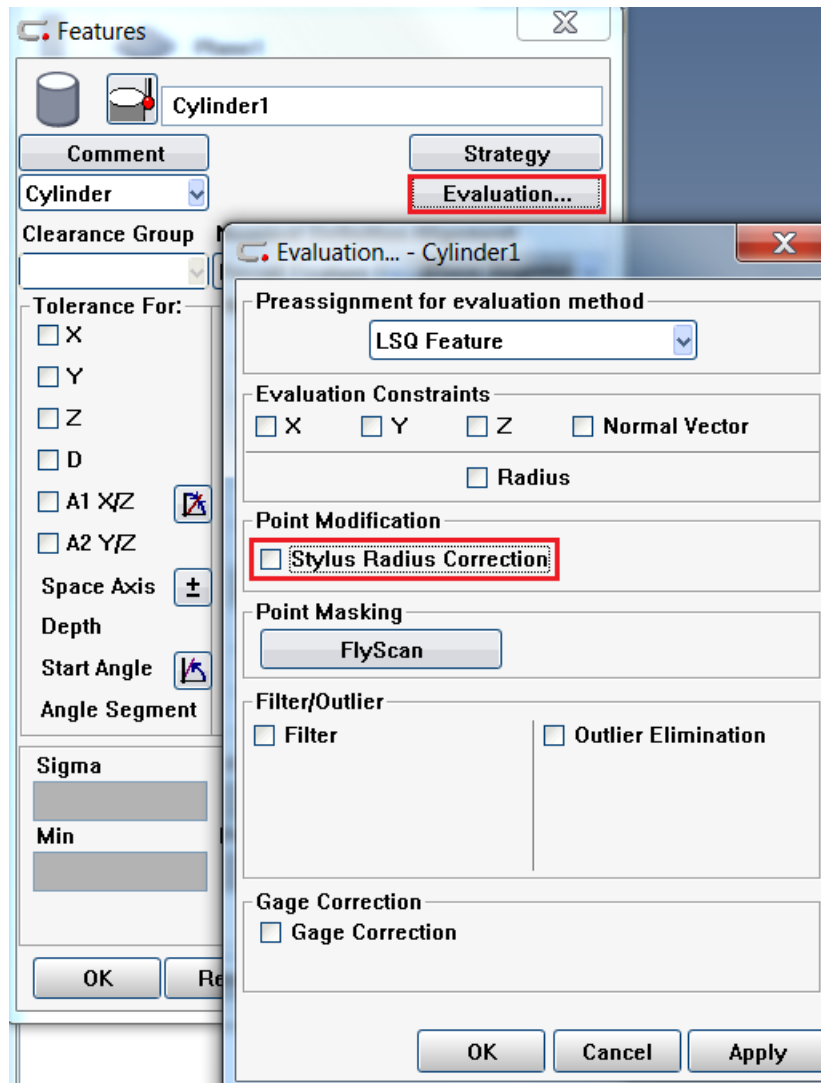
Select **Feature** then **Cylinder**



Select Options then Recall Feature Points



Select the two patterns of points then OK



Select **Evaluation...** and uncheck the **Stylus Radius Correction** field

You can now use the cylinder feature as a new alignment

You could do the same pressure with circles and then calling them into a 3D-line