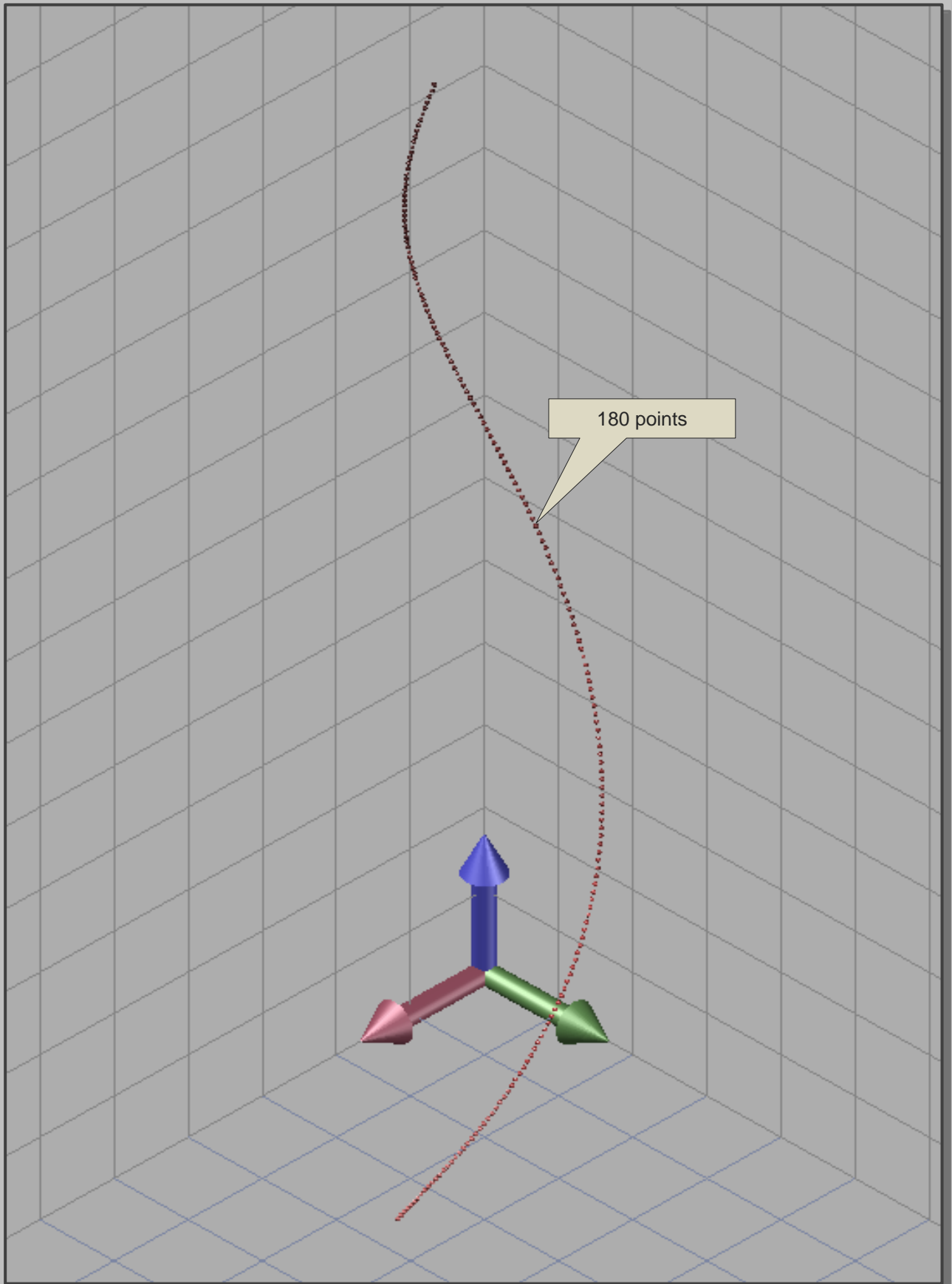
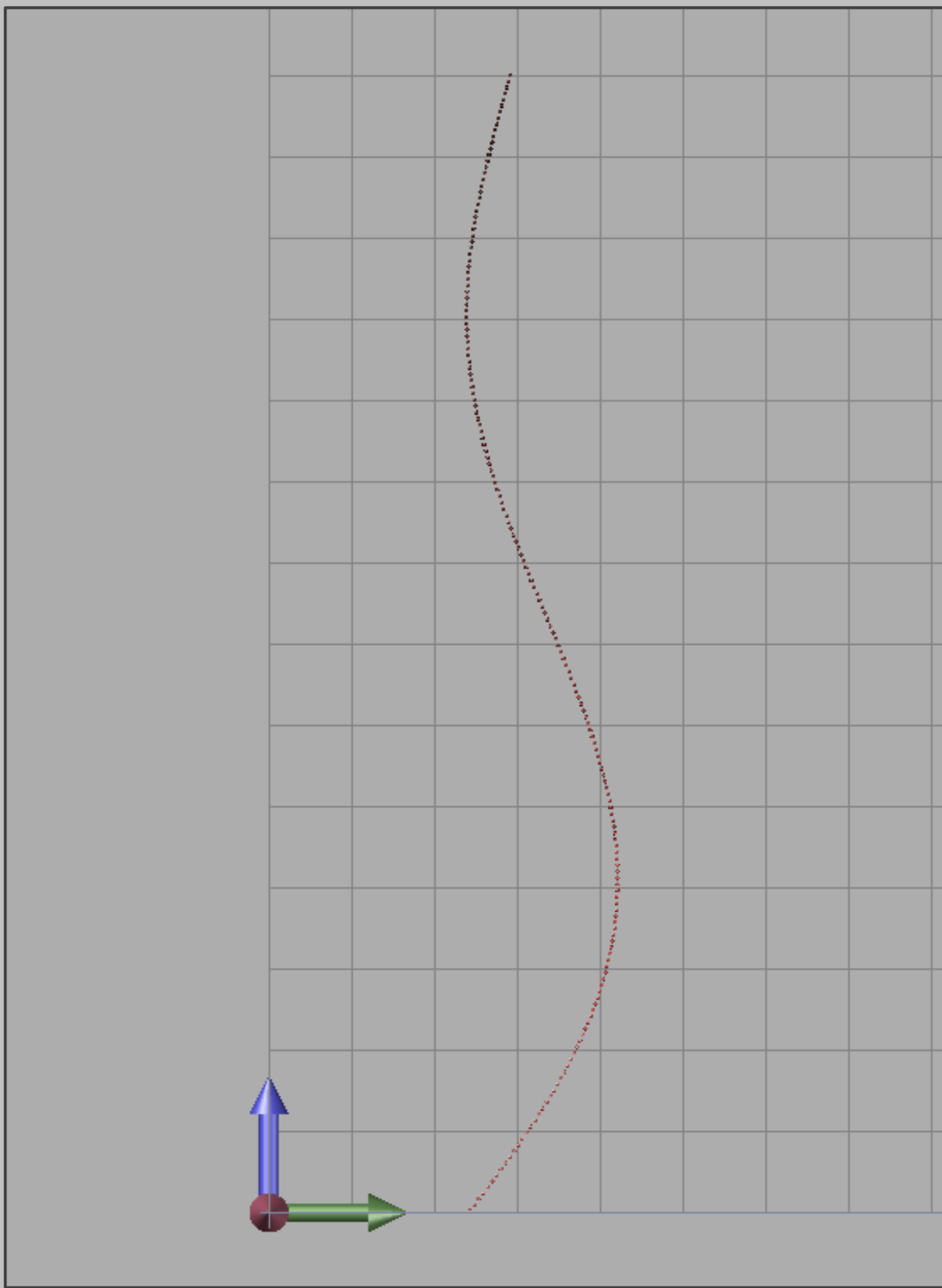


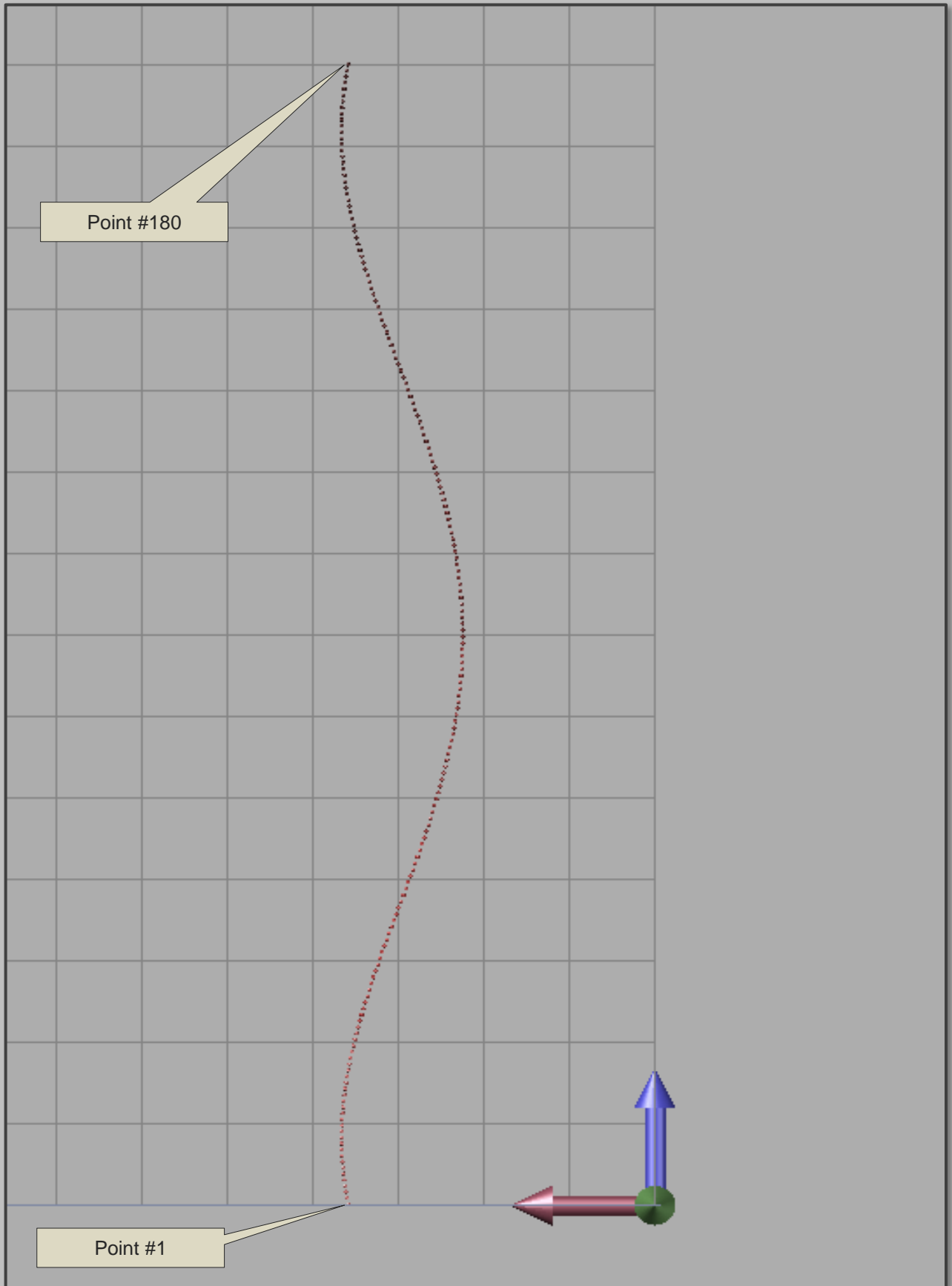
# Straightness of Cylinder



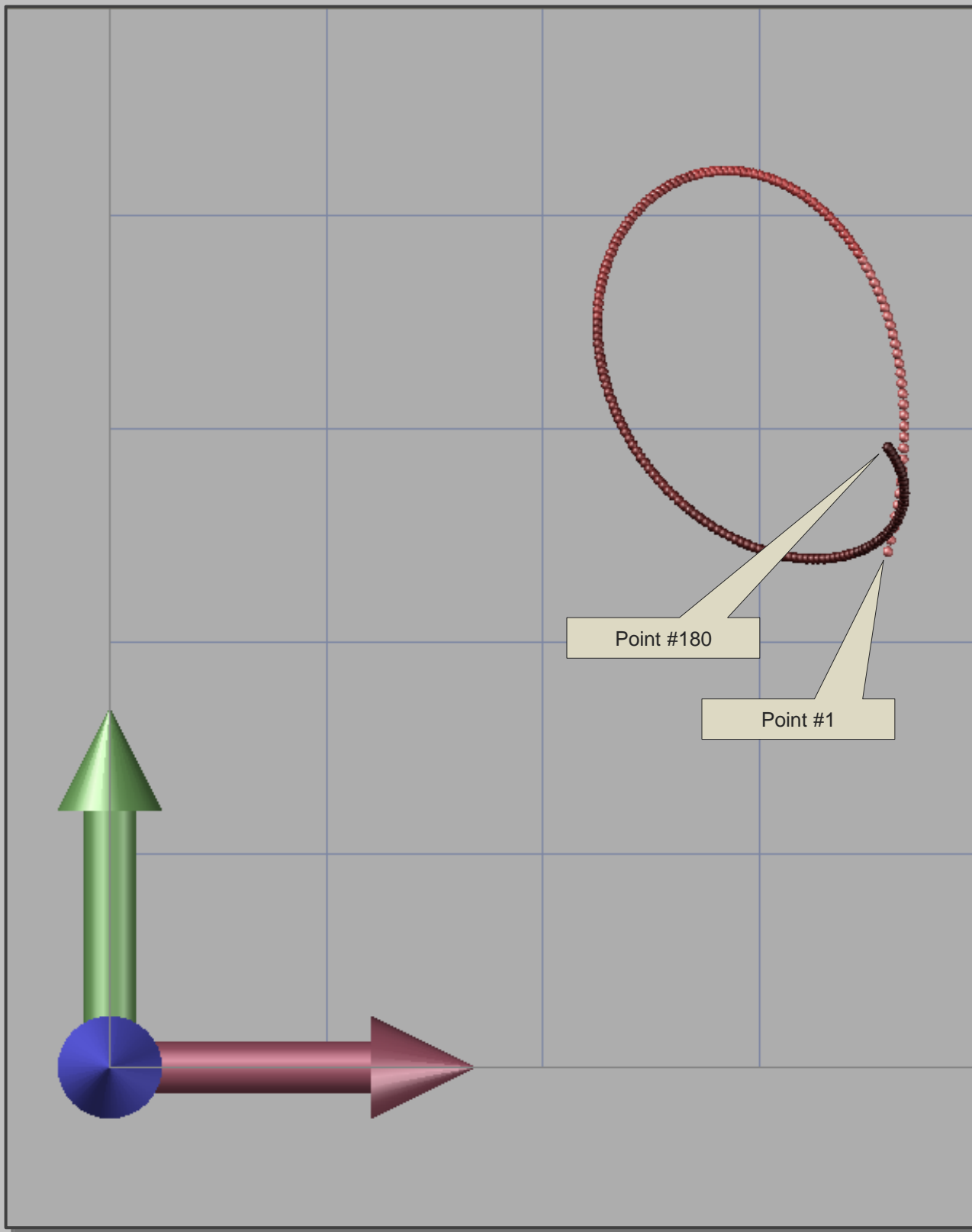
# Straightness of Cylinder



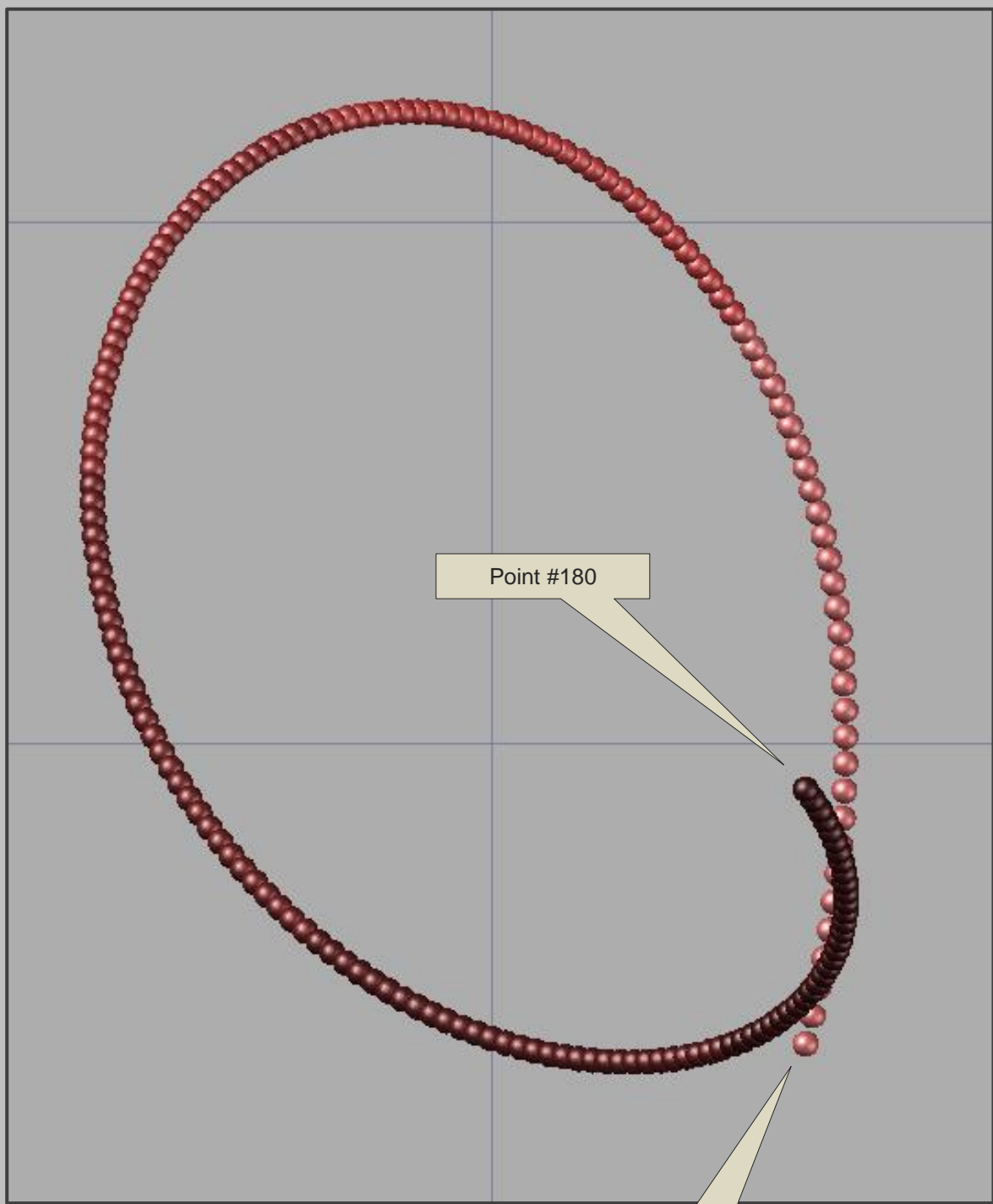
# Straightness of Cylinder



# Straightness of Cylinder



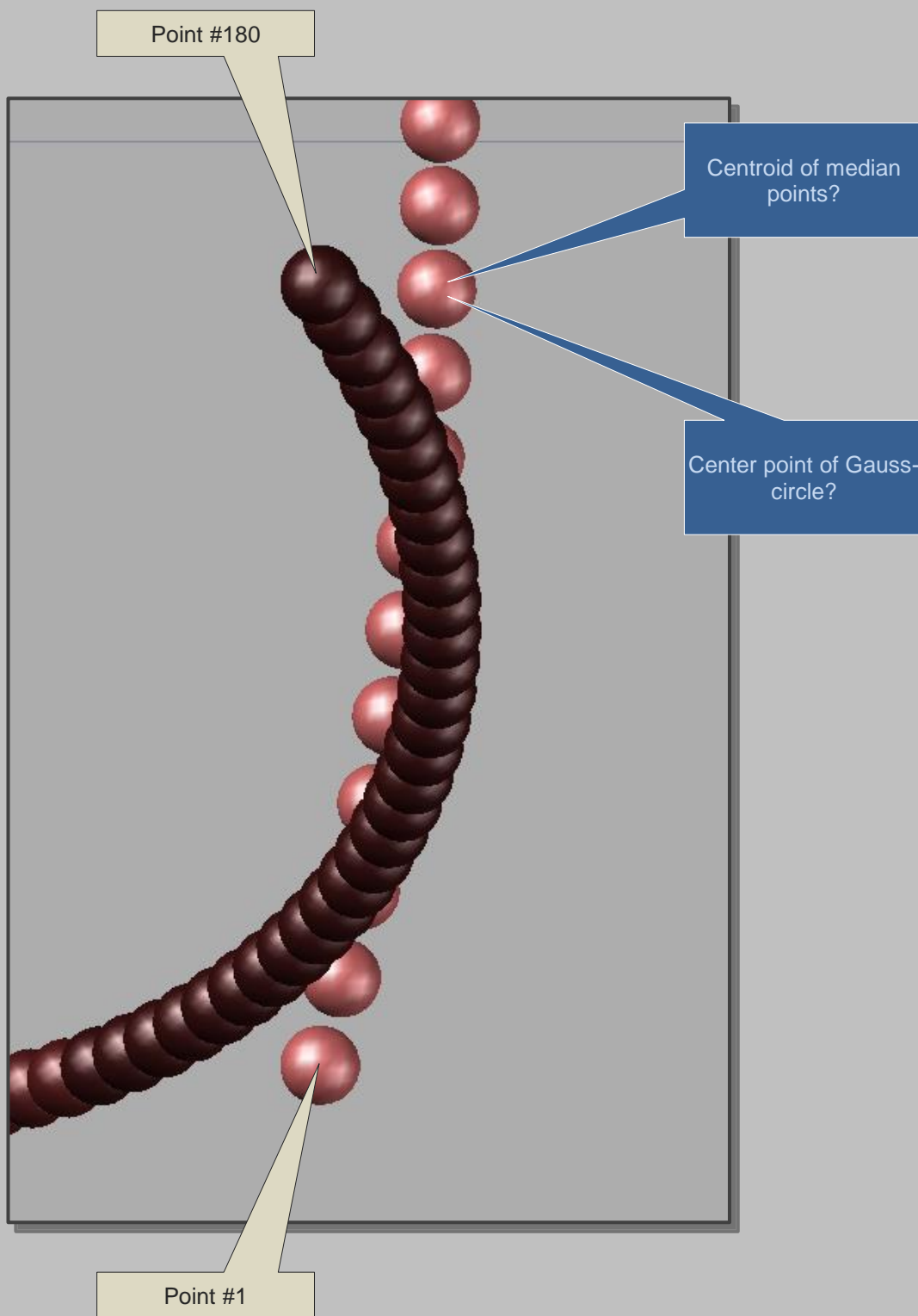
# Straightness of Cylinder



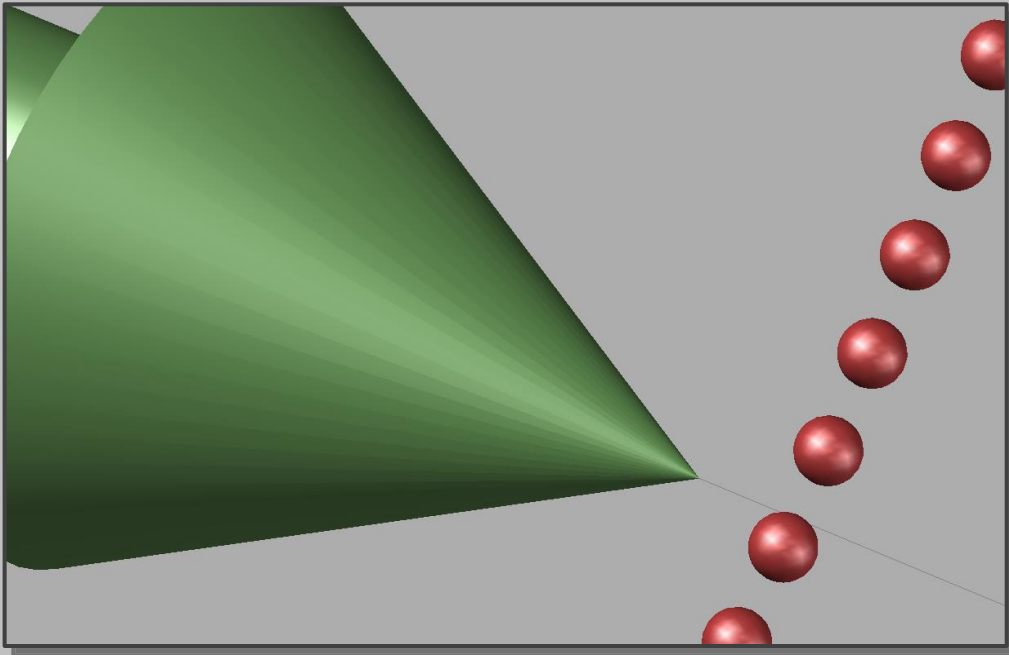
Point #180

Point #1

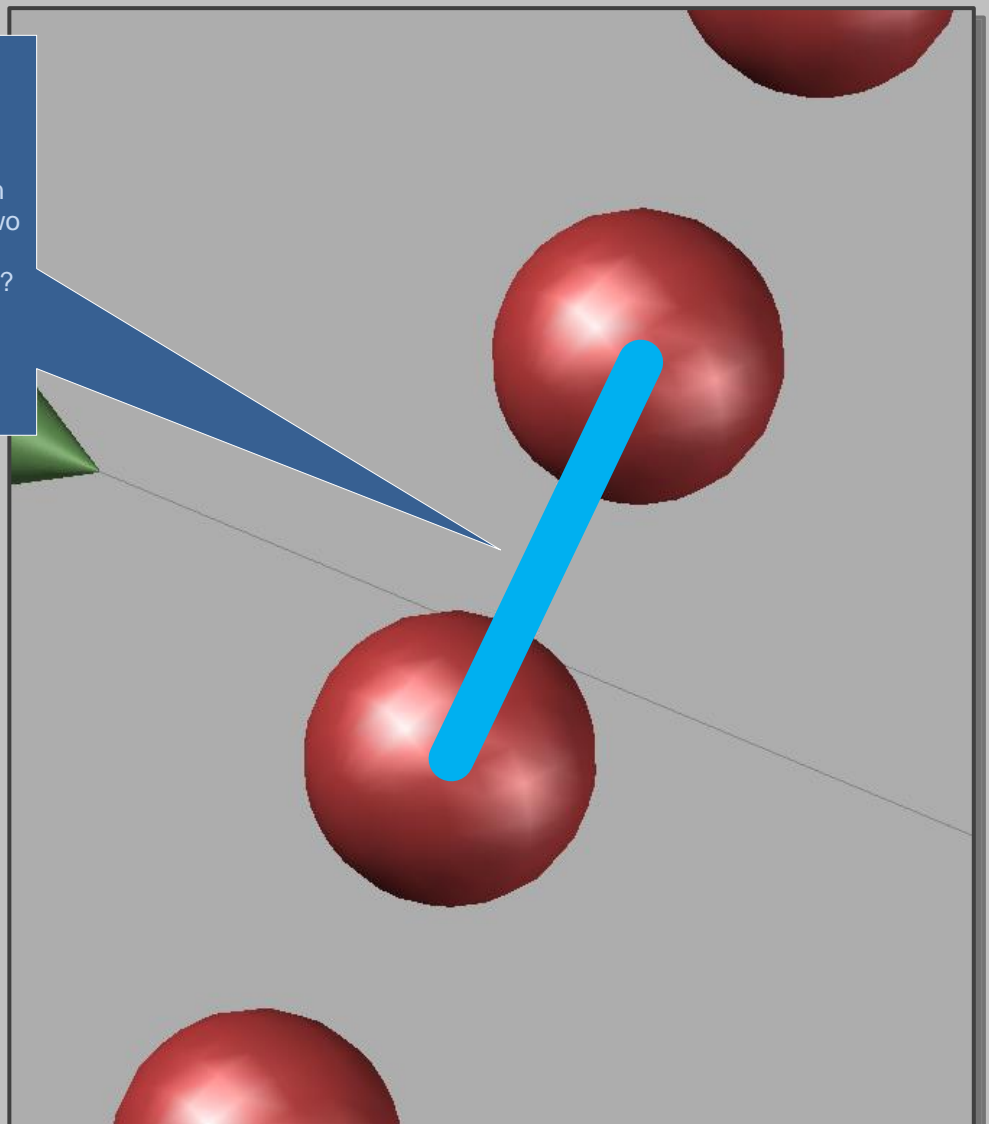
# Straightness of Cylinder



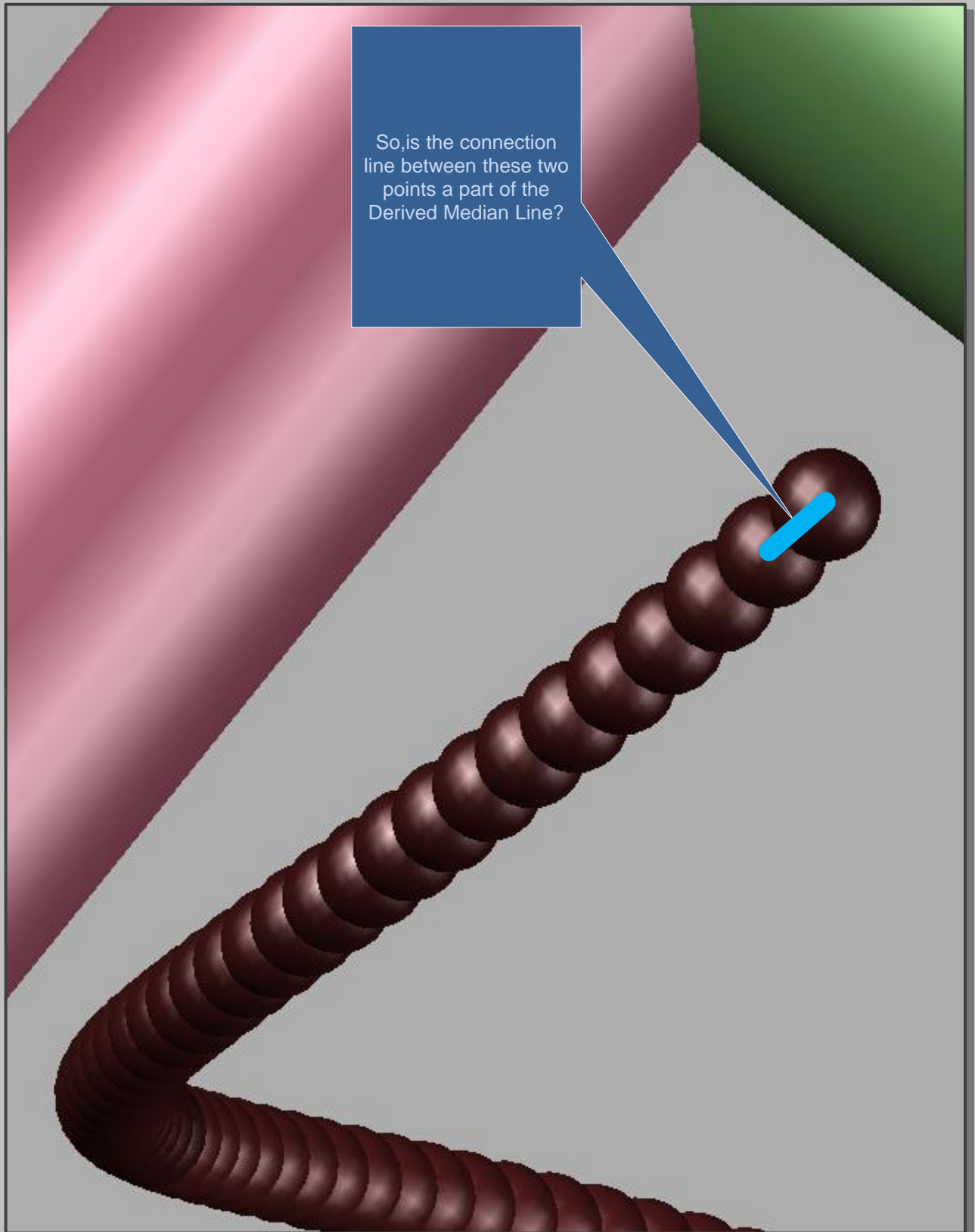
# Straightness of Cylinder



So, is the connection line between these two points a part of the Derived Median Line?



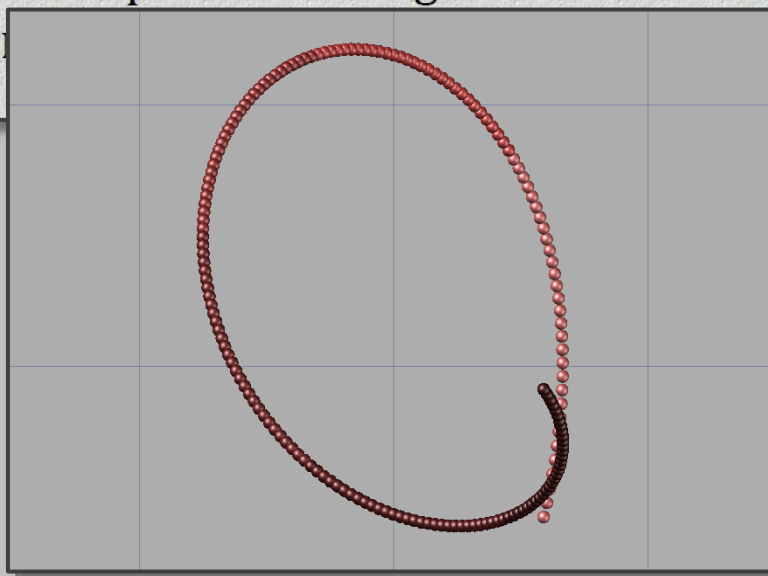
# Straightness of Cylinder





## Straightness of Cylinder

**8.4.1.3 Derived Median Line Straightness.** When the feature control frame is associated with the size dimension or attached to an extension of the dimension line of a cylindrical feature, the straightness tolerance applies to the derived median line of the cylindrical feature. A diameter symbol precedes the tolerance value indicating a cylindrical tolerance zone, and the tolerance is applied on an RFS, MMC, or LMC basis. The tolerance value may be greater than the size tolerance; the boundary of perfect form at MMC does not apply. See [Figures 8-3](#) and [8-4](#). When the straightness tolerance at MMC is used in conjunction with an orientation or position tolerance at MMC, the specified straightness tolerance value shall not be greater than the orientation or position



Each of the 180 points represents one cross section, that is perpendicular to the **UNRELATED ACTUAL MATING ENVELOPE**.

All these points are rotatory aligned in order to achieve a minimum of extension in X- and Y-direction. (Minimum Condition)

# Straightness of Cylinder

## 8.4.1.3 Derived Median Line Straightness.

Alignment:

Rotation around X and Y.

Translation X and Y.

In order to achieve the

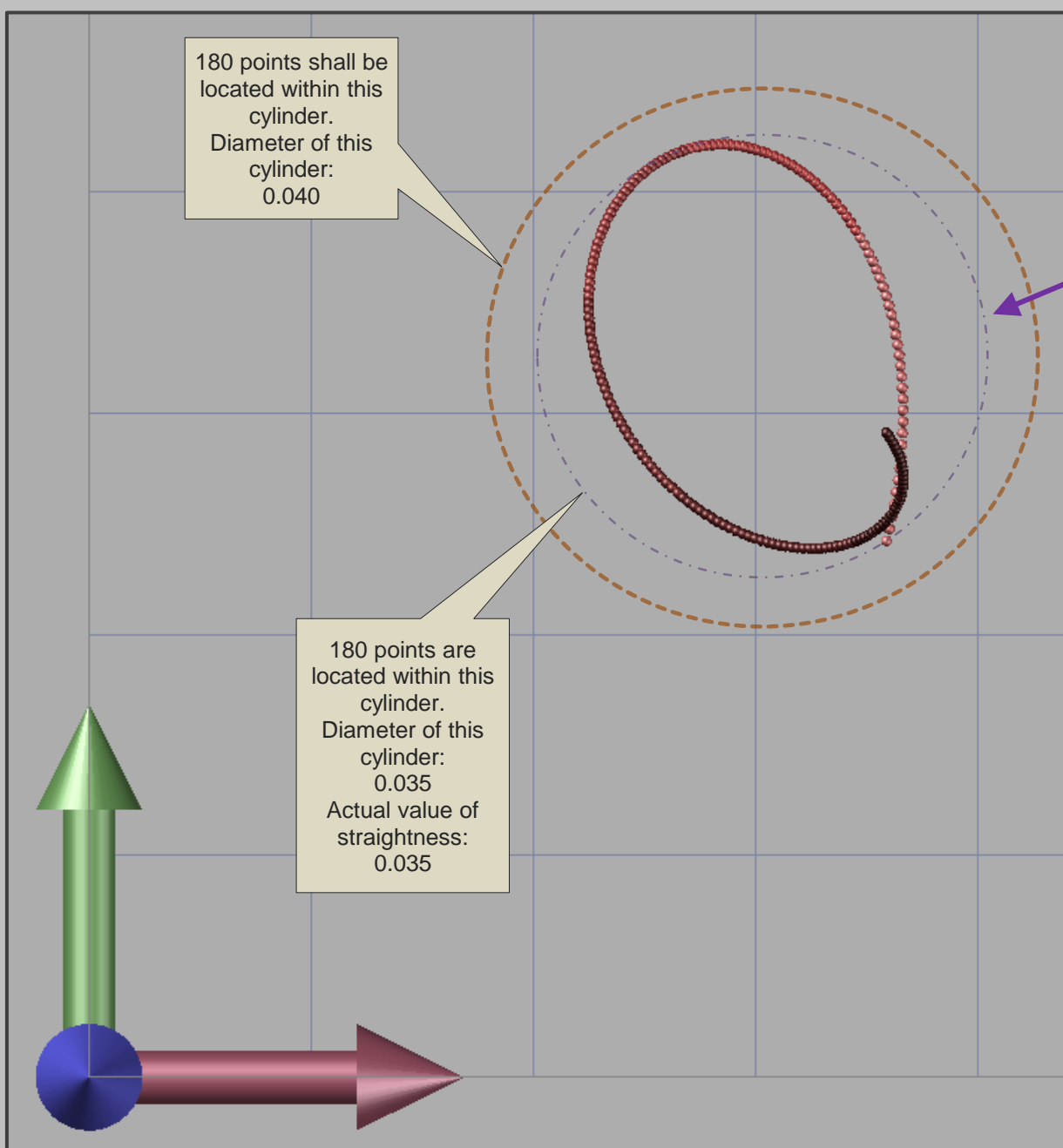
*Minimum-Envelope-Cylinder.*

—  $\varnothing$  0.04

diameter of cylinder

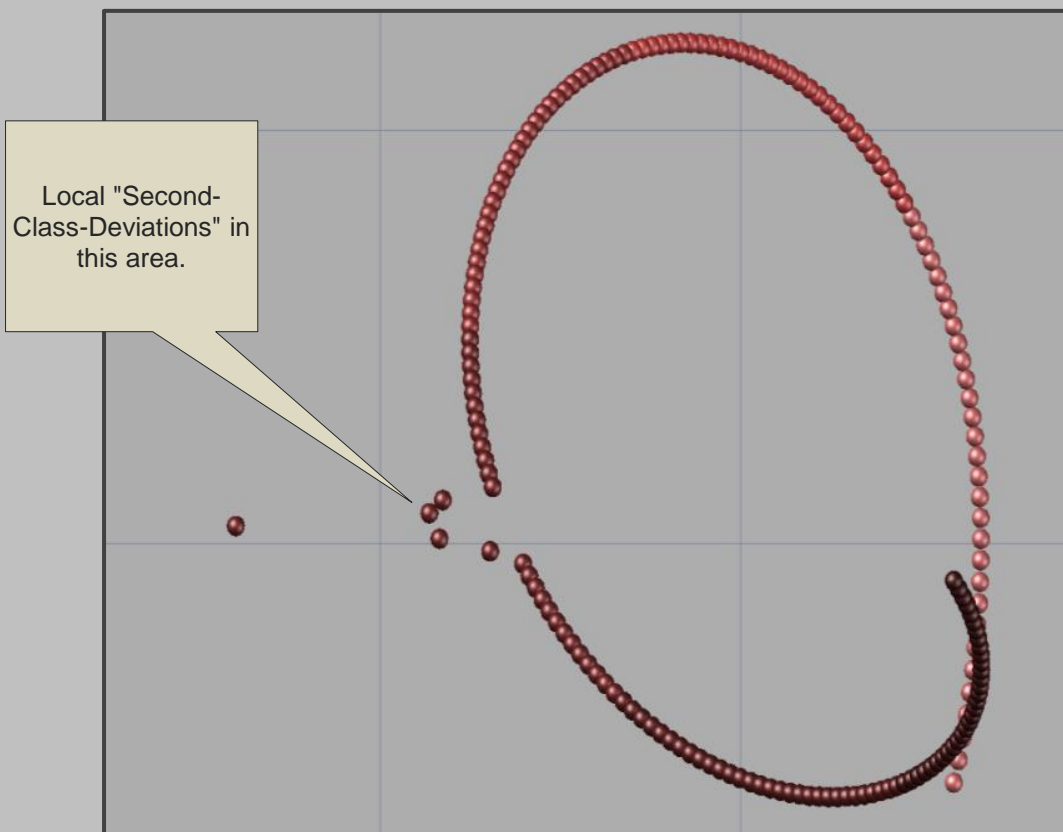
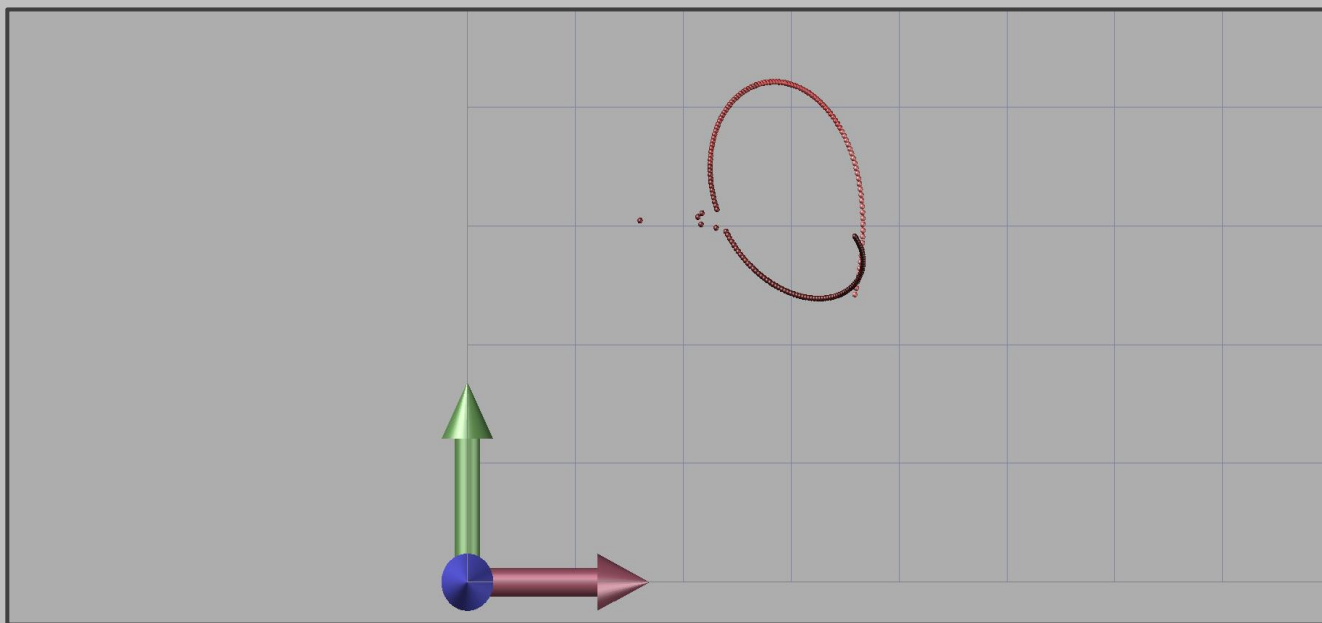
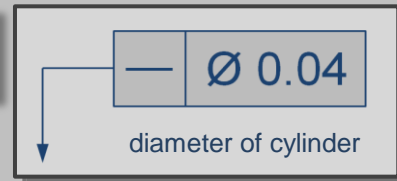
180 points shall be located within this cylinder.  
Diameter of this cylinder: 0.040

180 points are located within this cylinder.  
Diameter of this cylinder: 0.035  
Actual value of straightness: 0.035



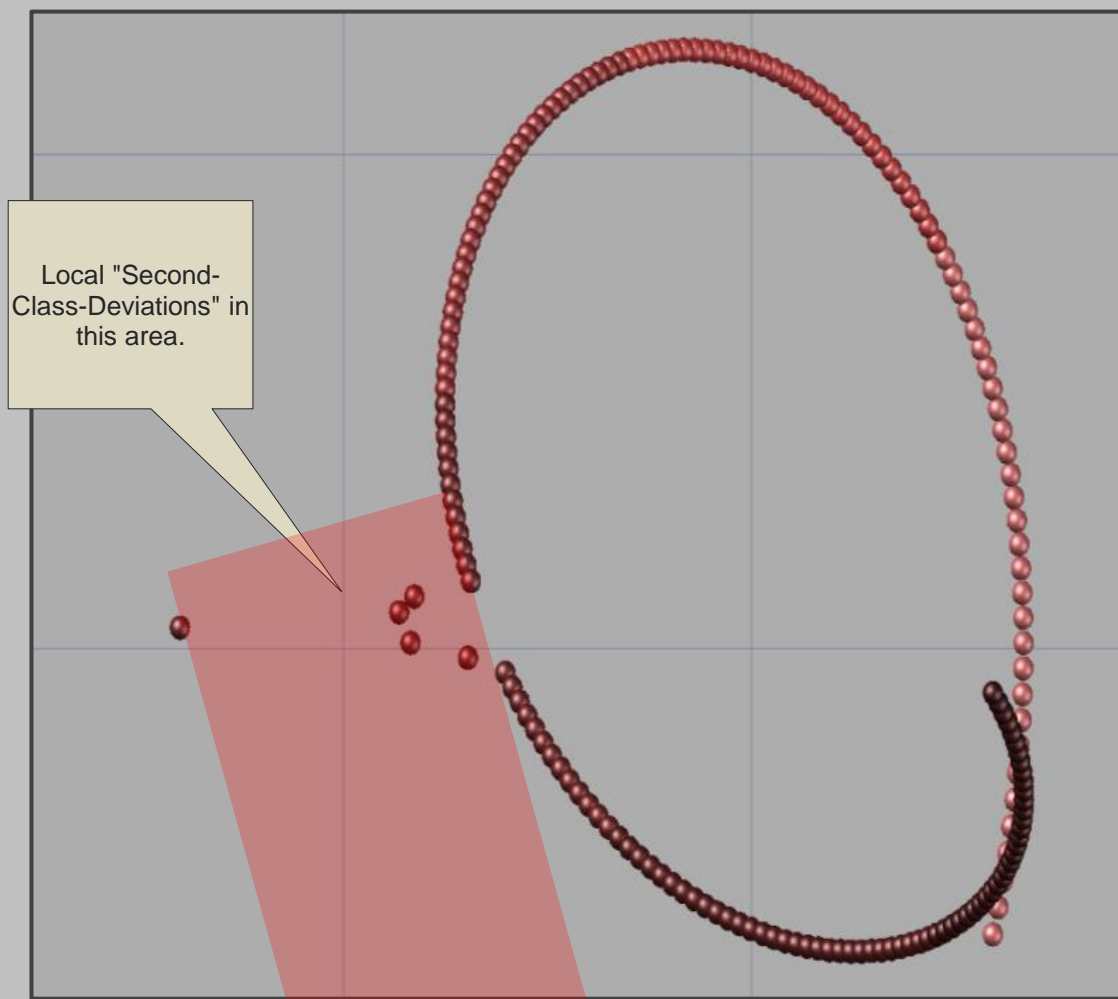
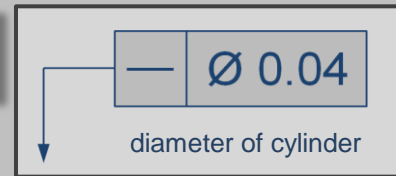
# Straightness of Cylinder

## 8.4.1.3 Derived Median Line Straightness.



# Straightness of Cylinder

## 8.4.1.3 Derived Median Line Straightness.



*Local deviations here don't lead to any necessity of "special" evaluations in terms of "SPINE" ; "SPLINE" or "SMOOTHING".*  
*The "All points in one Cylinder"-principle is still valid.*



## Straightness of Cylinder

The derived median line of the feature shall be within a cylindrical tolerance zone of 0.04 diameter, regardless of the feature size. Each circular element of the surface shall be within the specified limits of size.

cylindrical feature, the straightness tolerance applies to the derived median line of the cylindrical feature. A



Proposal #1

***All centroids of the feature shall be within a cylindrical tolerance zone of 0.04 diameter, regardless of feature size.***

Proposal #2

***All centerpoints of the feature shall be within a cylindrical tolerance zone of 0.04 diameter, regardless of feature size.***