**Problem 2-3:** A coordinate measuring machine has sampled the surface of a shaft feature and has generated the pattern of points shown below. Unlike the size tolerance which applies to a cross-section, the straightness tolerance is three dimensional and the points must be collected from the entire surface. Since it is not possible to show a 3D pattern of points on a planar paper, only two rows of points are shown representing the top and bottom of the shaft surface. The specification is for the shaft size to be 15-16 mm and a straightness tolerance of 0.5 mm at MMC. The GO gage is a 15.5 mm tube which is represented by two lines. Grab and move and rotate the gage to determine if the entire set of points can fit inside the gage tube. If it does, the feature straightness specification is acceptable.

15.5 mm GO