Tech Tip – Measuring Single Point Circles and 2-Point Slots

When measuring Holes and Slots for size and location it can be convenient and efficient to minimize the number of points to be measured when a large quantity of measurements is required. However, great care must be taken to ensure you are getting the best possible measurement results. This Tech Tip will outline the Best Practices for measuring Single Point Circles and 2-Point Slots.

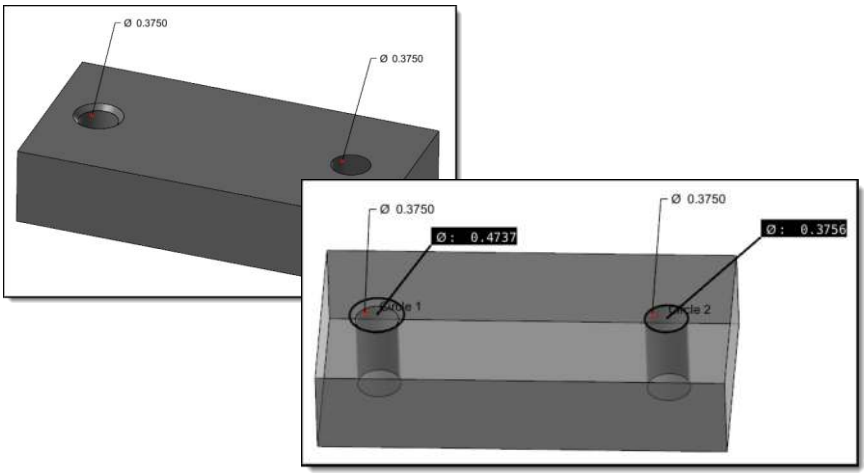
Are your Holes and Slots good candidates for this process?

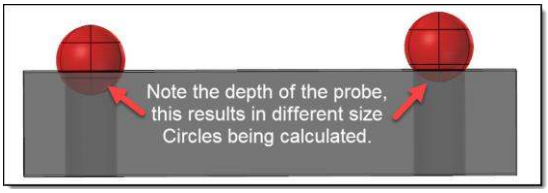
The single point circle and 2-point slot method are calculated based on the measured Plane and the diameter of the Probe used for measurement. Verisurf reads the Probe diameter with each measurement so it is easy to understand that the calculation for these features is the intersection of a Sphere (the probe) and the measured Plane. At this intersection, the Diameter of a Circle is calculated or the length and width of a slot is calculated. Since the calculation is done at the intersection of the Probe and the Plane it is critical that the edge of the hole or slot is not damaged or beveled in any way. The quality of the edge can impact the size and location of the Hole or Slot. However, it is possible to measure the location of a Hole with a uniform countersink accurately if necessary.

The two illustrations shown right - a Hole with a good edge and one with a bad edge.

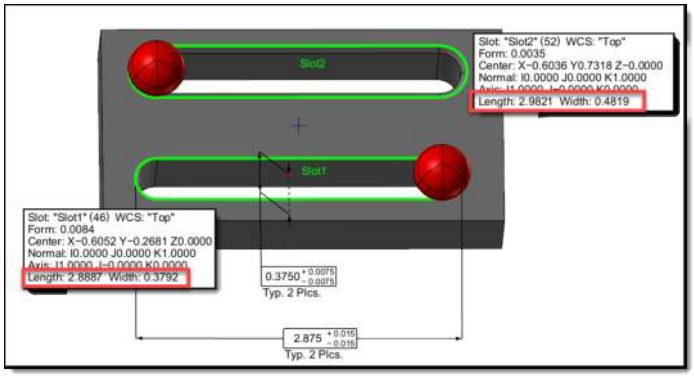
Top - Holes with a good edge, Bottom - Holes with poor edges these would yield poor results.

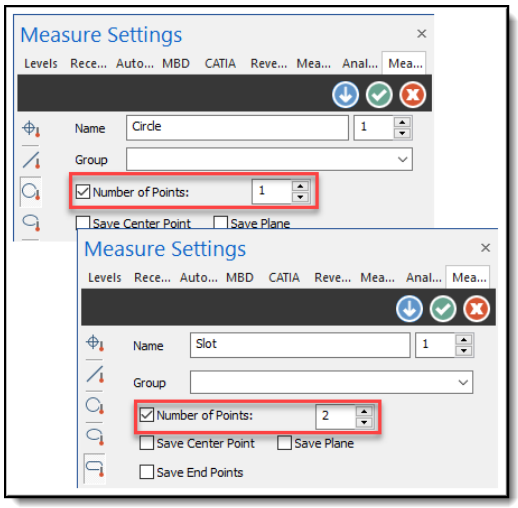
The following examples demonstrate how holes and slots of the same size give different results due to countersinking or chamfering of the hole or slot.





Below – two slots measured, top with a chamfer, bottom without chamfer:





Above – When measuring a Single Point Circle or 2-point slot the Measure Settings must be hand entered and confirmed with the -Enter- key.