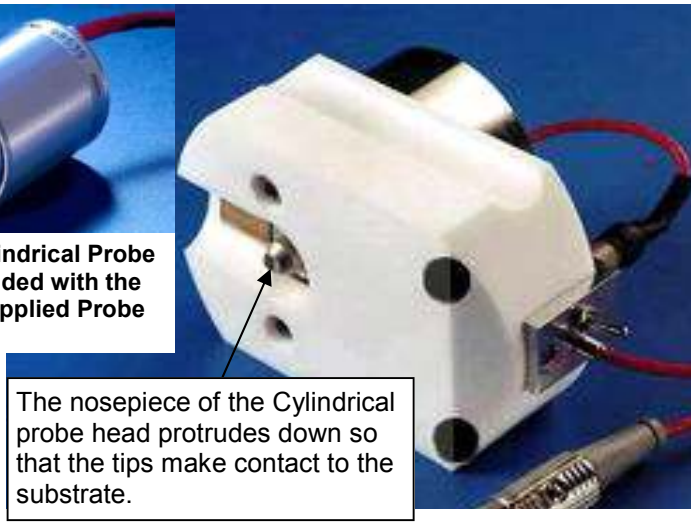
Using the Hand Applied Probe to Measure Small Samples

The Jandel Engineering Hand Applied Probe is ideally suited for large substrates and flat panels, however, it can also be used on small samples. The rear beveled edge of the Hand Applied Probe is placed either on the substrate (in the case of a large sample) or upon the table that a smaller substrate is placed upon. The Hand Applied Probe is lowered down into position as it pivots on the beveled edge that has the two rubber pads. If the sample is small, then additional pieces of the same thickness of material can be placed under the flat portion of the base so that the entire unit stays level. If the substrate is so small that it can fit within the 1" (25.4mm) diameter hole in the heavy cylinder into which the Cylindrical probe head fits, then the probe can be removed from the Hand Applied Probe prior to positioning the large cylinder over the sample. In the image shown below, a 5mm x 10mm sample is placed such that it is entirely within the 1" diameter hole. The Cylindrical probe is positioned in the hole so that the four tips touch the material, and then it is pressed down until the four needles retract and the nosepiece pad touches the substrate. The two red Teflon screws can then be tightened to hold the Cylindrical probe into position.

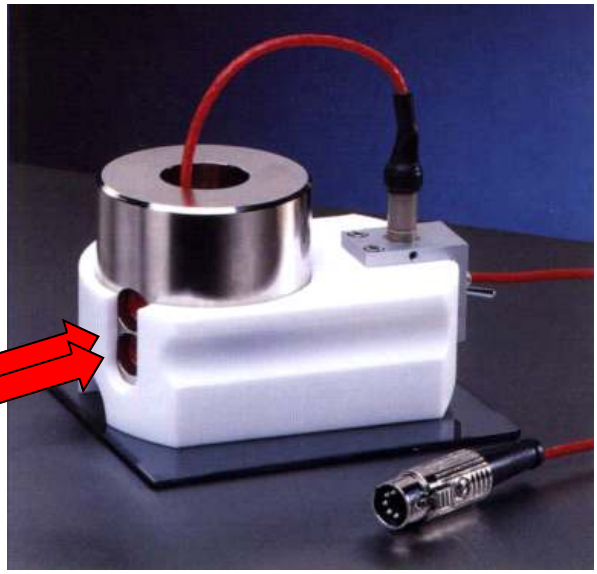
A system that Jandel offers especially for small samples is the Microposition Probe which can be seen here: http://www.fourpointprobes.com/janmp.html

Please note that thin film samples as small as 5mm x 10mm must have a significant correction factor applied to arrive at a true value in sheet resistance. Information about correction factors can be seen here: http://www.fourpointprobes.com/correct.html

One Cylindrical Probe is included with the Hand Applied Probe



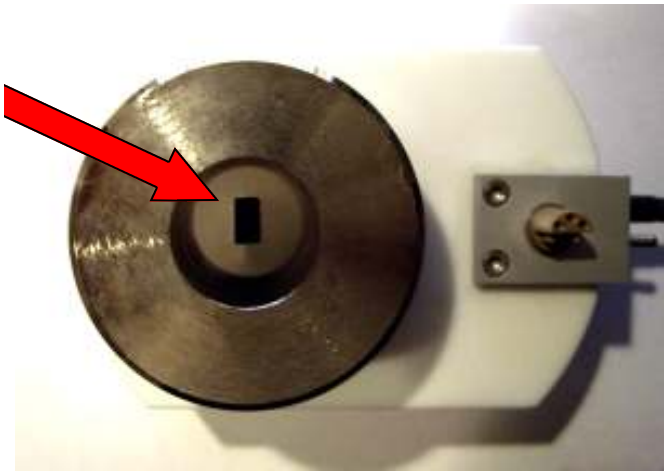
The nosepiece of the Cylindrical probe head protrudes down so that the tips make contact to the substrate.



Screws for holding the probe head down into position so that the tips are retracted into the probe head and the factory set load is applied.

Sample size of 5mm x 10mm.

With samples this small it is NOT necessary to have additional pieces of material to keep the Hand Applied Probe body level since the sample fits entirely within the 1" diameter hole of the Hand Applied Probe.



If the material will fit within the 25mm diameter hole in the Hand Applied Probe, then the unit can be placed over the material and the probe can be positioned down through the top so that the tips rest on the material. Pressing down on the probe until the nosepiece pad touches the substrate will compress the needle springs such that the factory set load is achieved. The red Teflon screws shown above can then be tightened so that the needles will remain retracted with the factory set tip pressure applied to the material.

The Cylindrical probe head should be brought down into contact until the acrylic nosepiece pad touches the substrate. This is the point at which the factory set load is achieved.