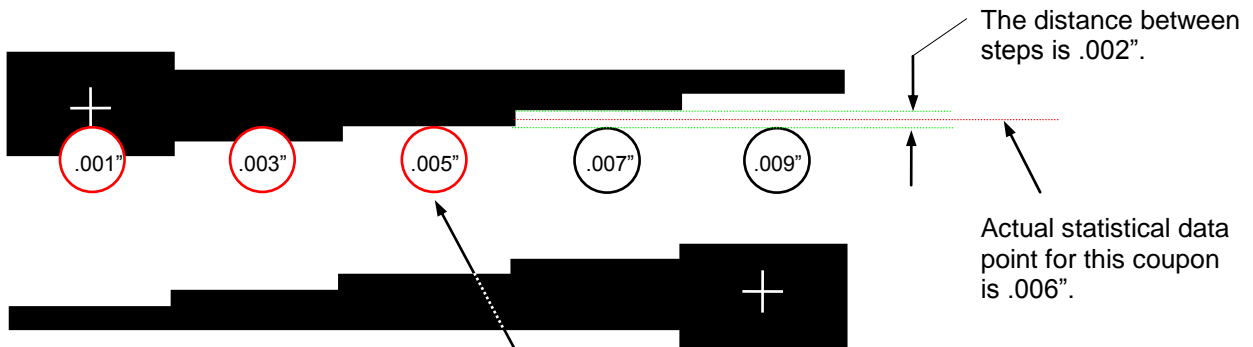


# TECH NOTE - Boundary Issue

## Calculating Test Resolution With PerfectTest



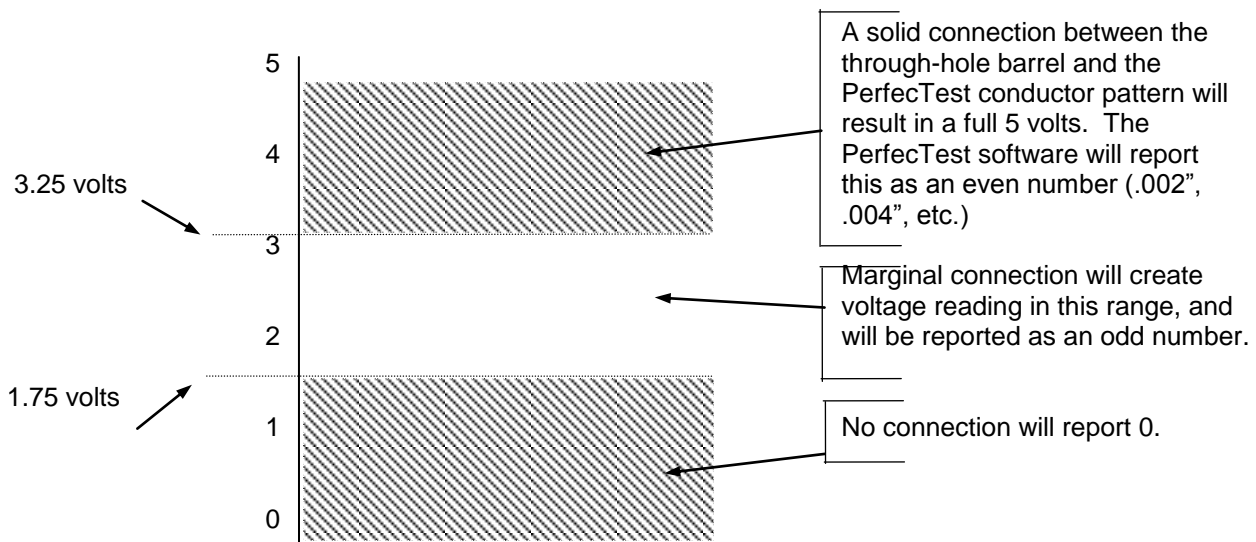
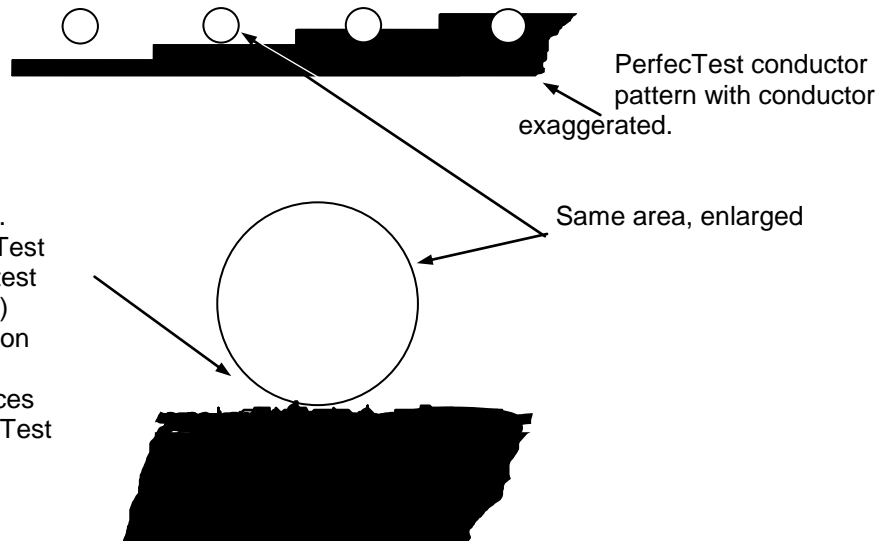
In this example, it is not known if hole .005" is just barely making contact with the conductor, or if hole .007" it is almost in contact with the conductor. Statistically, it is half way between - .006". For that reason, the software automatically adds .001" to each reading. That is why the minimum detectable error reads .002" with the software versions 1.8 and higher.

In the earlier software version, the software also added the same .001" to the "raw" data when calculating the MAXIMUM TRUE POSITION ERROR report, so the user was not aware of this. All other reports did not add the .001". This change improves the overall accuracy of data to better than + or - .001" on individual panel data, while data shown in reports as average data is always calculated to a resolution of .0001".

It is important to understand that in calculating scale factors, PerfectTest **always averages the test data over the entire test lot, so that the resolution of the scaling data is accurately calculated to .0001"**, even though resolution on individual panels is .002".

The drawings below illustrate how small variations in registration are recorded by the PerfectTest process.

A marginal clearance this point may allow the voltage to fall between the upper/lower limits as shown on the chart below. This will cause the PerfectTest software to report an odd test number, (.001", .003", etc.) instead of the more common even number (.002", .004" etc.). This actually enhances the accuracy of the PerfectTest data.



The above sketches will explain why the TEST DATA BY PANEL will sometimes indicate an odd numbered data point (.001", .003", .005", .007", .009") instead of the expected even numbered data points (.002", .004", .006", .008", .010"). The data is accurate in both examples.

PerfectTest Corporation LLC  
14221 65<sup>th</sup> Avenue West  
Edmonds WA 98026 \* USA  
information@perfecttest.com

TEL 206-465-4997

www.perfecttest.com

**perfectTest**®  
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