

### **How are the initial control limits calculated for attributes (when there is not any data)?**

- If an attribute is configured to have calculated control limits, WinSPC will determine an initial set of control limits to use prior to the first time the limits are recalculated based on the data (by default, this will occur after the 25th subgroup).

If the attribute has a fixed (or constant) lot size (and displays a np-chart, nq-chart, or c-chart) , then the initial CL (Center Line) is calculated based on the Lot Size as follows:

If the attribute has a variable lot size (and displays a p-chart, q-chart, or u-chart), then the initial CL is calculated as follows:

In addition, for the purposes of the first subgroup's control limit calculation, the Lot Size is assumed to be 100.

The UCL (Upper Control Limit) and LCL (Lower Control Limit) are then calculated based upon the chart type and options selected on the 'Control Limit' tab of the attribute properties.

More details on the calculations used for the chart types can be found here:

p-chart np-chart c-chart u-chart

<https://knowledgebase.winspc.com/questions/194/>