Control Charts Guideline

PURPOSE
Similar to a run chart, a Control Chart shows your system’s performance over time. What makes it different from a run chart is the addition of upper and lower control limits. These calculated control limits are referred to as “the voice of the process” (VOP).

Based on the rules of normal distribution, when a process is in control, it will show:
- All points within the control limits (G)
- 68% of the measurements within +/- one standard deviation (F)
- A random pattern of collected data points (E)

CONTROL CHART COMPONENTS

(A) Title – The title should include what you are measuring, time frame it was measured and location where the measurement was taken.

(B) X-axis – Usually time (e.g., day, week, month), or it could be the observation number. This variable will always be put in time order, meaning what came first, second, third etc.

(C) Y-axis – The dependent variable (the unit that is measured) e.g. minutes, number observations, etc.

(D) Center Line – The center of the chart, representing the mean (average) of the points plotted.

(E) Points – The plotted data that has been collected.

(F) Standard Deviation – Indicates the amount of variation from the centerline (mean). Each side of the centerline extends to 3 standard deviations.

(G) Upper/Lower Control Limit – This is a calculated line based on the spread of your data.
What are the rules to determine if the process is “out of control”?

- One point more than 3 standard deviations from the centre line.
- Nine or more points in a row on the same side of the centre line.
- Six or more points in a row continually increasing or decreasing.
- Fourteen or more points in a row alternating up and down.
- Two out of three points in a row more than 2 standard deviations from the center line.
- Four out of five points in a row more than 1 standard deviation from the center line.
- Fifteen points in a row all within 1 standard deviation of the center line on either side of the center line.
- Eight points in a row all over 1 standard deviation of the center line, on either side of the center line.