Control Chart Cheat Sheet

Key Concepts

- ◊ A control chart is a graph of your data with average and sigma lines to determine process stability.
- ◊ The average and sigma lines are calculated from the data.
- ◊ The upper control limit (UCL) and lower control limit (LCL) represent the ± 3 sigma lines.
- ◊ 99.7 % of your data should fall between the UCL and LCL.

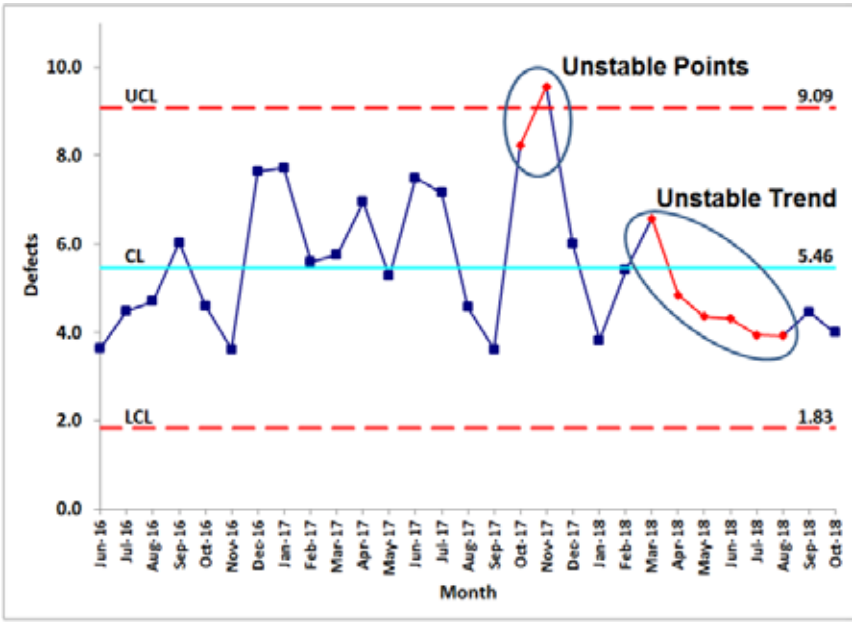
Processes Have Two Different Kinds of Variation

Common Cause: The natural variation that exists within any process.
Example: Your commute to work takes varying amounts of time each day.

Special Cause: Variation that is due to something out of the ordinary.
Example: A contruction zone, blizzard, or traffic accident.

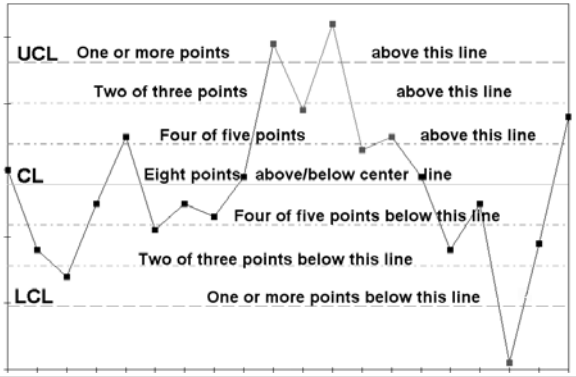
Special causes require immediate cause-effect analysis to eliminate the source of variation. Once special causes have been addressed and a process is stable, you can launch an effort to reduce common causes of variation.

Example of a Control Chart



Stabilty Analysis

- ◊ Stability analysis is designed to identify special cause variation.
- ◊ An unstable condition, can be a single point, a set of points or a trend.
- ◊ Control charts use the zones created by the sigma lines and the stability rules to analyze your data and identify unstable conditions.



Types of Control Charts

Attribute Charts for Counted Data	Variable Charts for Measured Data
defects, errors, injuries, etc.	length, weight, depth, time, etc.
c chart p chart u chart np chart	XmR / ImR Chart (Individual Moving Range Chart) XbarR Chart XbarS Chart

Control Charts for Special Situations

- EWMA and CUSUM charts for small shifts in a process
- g charts and t charts for rare events
- Levey Jennings standard deviation chart - used in healthcare labs
- Short Run control charts when making a few parts of different sizes

Control Chart Cheat Sheet

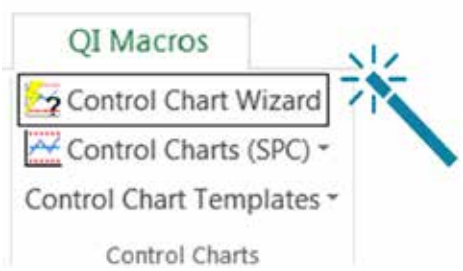
Examples of Control Chart Tools Included in QI Macros for Excel

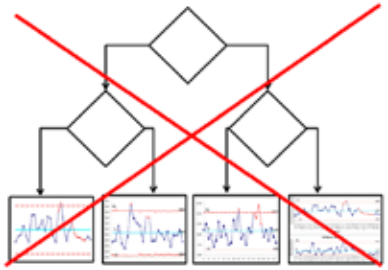
Control Chart Wizard

Not sure which chart to choose?

QI Macros Control Chart Wizard analyzes your data and selects the right control chart for you.

One Click Wizard vs. A Forest of Decision Trees





Control Chart Dashboards

Do you update multiple charts on a regular basis?
Do you track monthly KPIs?

QI Macros Control Chart Dashboards can save you hours of time.

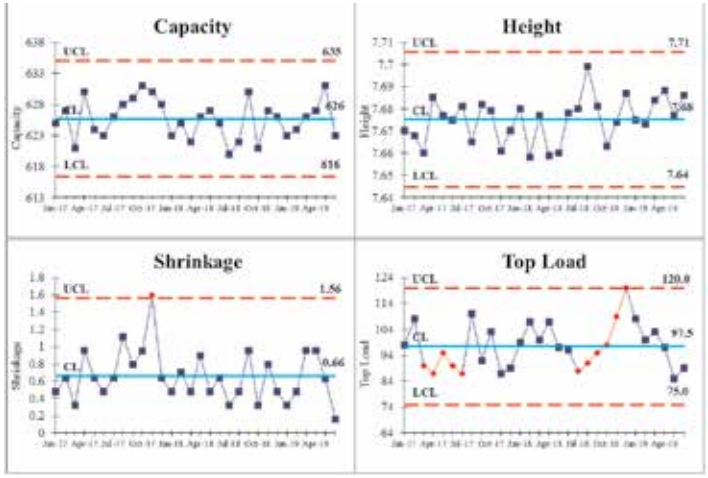
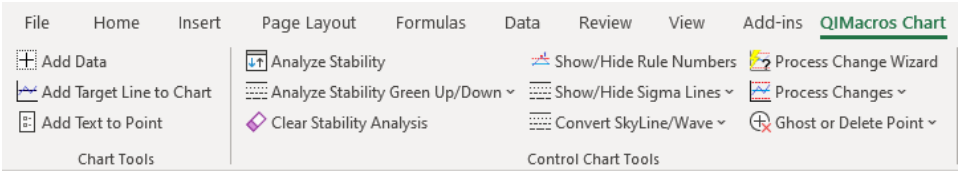


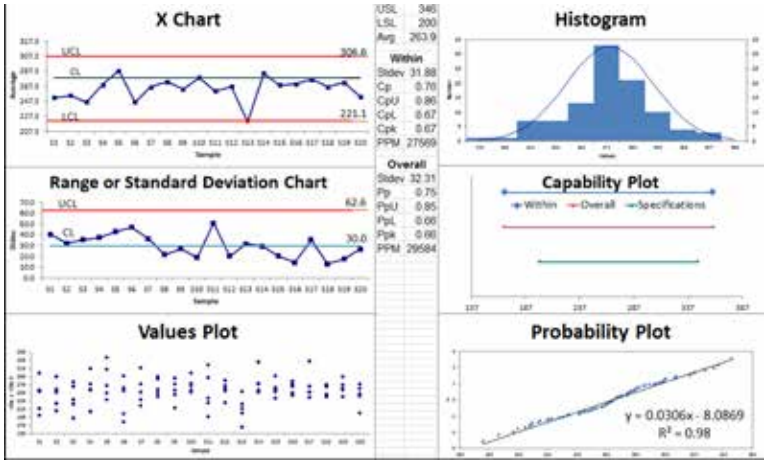
Chart Menu Automates Common Tasks



- ◊ Add Data, Text or Target Lines
- ◊ Calculate or Recalculate Control Limits
- ◊ Show Process Changes with Stair Step Limits
- ◊ Run and Re-run Stability Analysis
- ◊ Display or Hide Control Limits
- ◊ Format and Share Charts

Capability Suite of Six Charts

Analyze normality, stability and capability with one click.



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2696 S. Colorado Blvd., Ste. 555
Denver, CO 80222
888-468-1537 or 303-756-9144

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