

Range Chart

As tools wear the products produced may begin to vary more and more widely around the values specified for them. The mean of a sample may still be close to the specified value but the range of values observed may increase. The result is that more and more parts produced may be under or over the specified value. Therefore quality assurance personnel examine not only the mean (XBAR chart) but also the range of values in their sample lots. Again, examine the boltsize.LAZ file with the option Statistics / Statistical Process Control / Control Charts / Range Chart. Shown below is the specification form and the results:

Range Charting

Directions: First, click on the variable name that represents the sample lot number. Next, click on the variable that represents the measurement. Click on the sigma button to change the default and click on any of the optional check boxes and enter specifications desired. Click the Compute button to obtain the results. Up to 200 groups may be analyzed. NOTE! Equal group sizes of 2 to 25 required for ranges analysis. Control limits are plus and minus 3 sigma.

Selection Variables:

- Lot No
- Bolt Lngth**

Group Variable: Lot No

Measurement Variable: Bolt Lngth

Option: Print Chart

Buttons: Compute, Return, Reset, Cancel

Figure 1 Specification Dialog for the SPC Range Chart

Group	Size	Mean	Range	Std.Dev.
1	5	19.88	0.90	0.37
2	5	19.90	0.70	0.29
3	5	20.16	0.60	0.27
4	5	20.08	0.70	0.29
5	5	19.88	1.20	0.49
6	5	19.90	0.90	0.39
7	5	20.02	1.10	0.47
8	5	19.98	1.00	0.43

Grand Mean = 19.97, Std.Dev. = 0.359, Standard Error of Mean = 0.06
 Mean Range = 0.89
 Lower Control Limit = 0.000, Upper Control Limit = 1.876

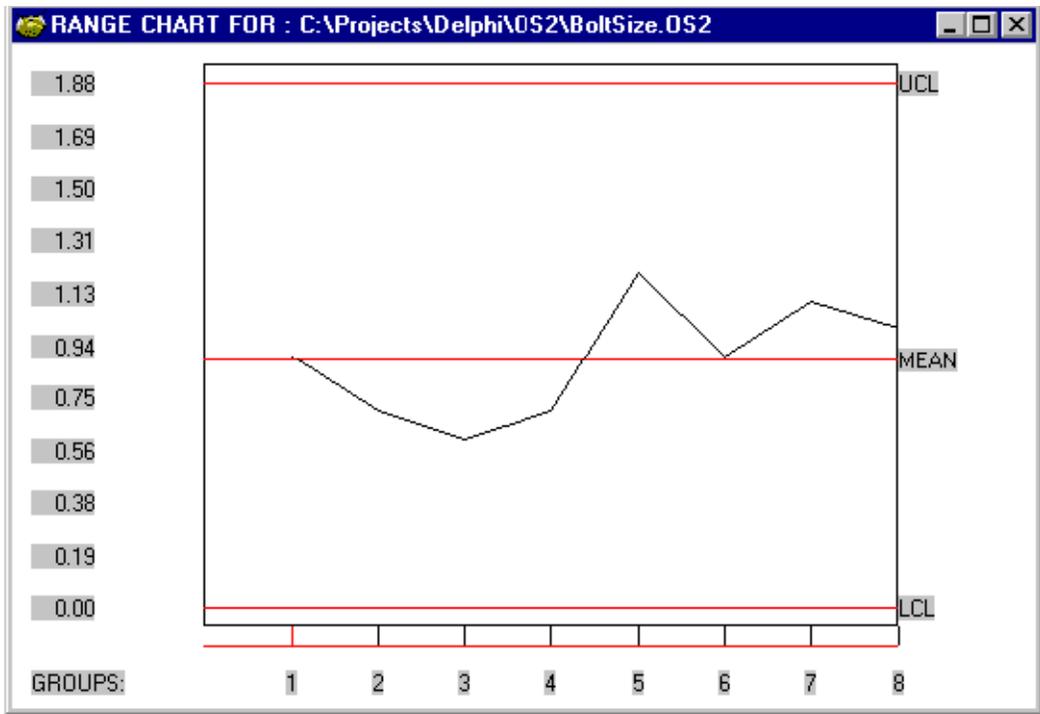


Figure 2 The SPC Range Chart