

Practice: Constructing an X-Bar and S Chart

Open the file **Diameter SPC.jmp**. In this example, the characteristic of interest is the outside diameter of plastic parts, measured in mm. Subgroups of five consecutive parts were measured every day for 20 days.

1. Use the Control Chart Builder to construct an X-bar and S Chart for **Diameter**, subgrouped by **Day**.
2. Run the tests for special causes.
3. One point is outside the control limits, but a second test for a special cause was violated. Interpret this test.
 - Which test was violated? What is the rule? (Hint: Hold your mouse pointer over the point to see the rule for the test.)
 - In practical terms, what does this test signal?

Test 5 was violated. This is a test for two out of three points in a row more than two standard deviations from the mean. This indicates that there might have been a shift in the process mean.

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