

Design-Expert® Software Version 10 Feature Tour: Simple Sample Data Analysis

Version 10 of Design-Expert (DX10) features a “simple sample design” that facilitates a straight-forward analysis of raw data, making it easy to calculate the mean and other statistics that characterize measurements.

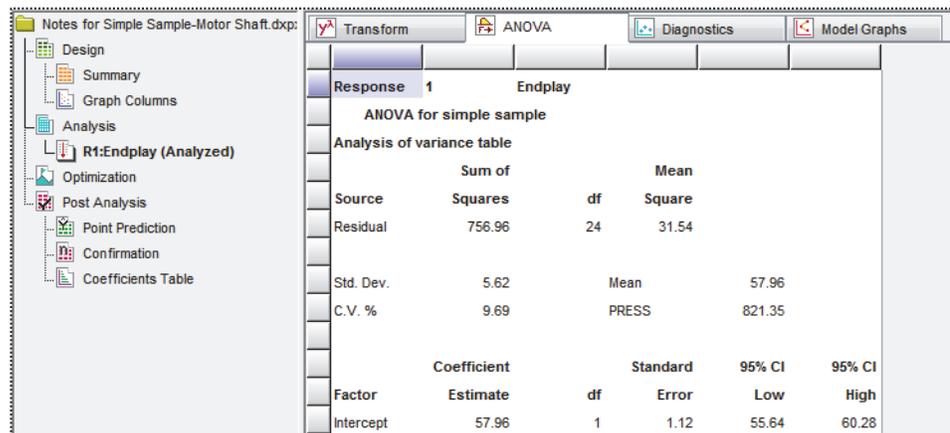
To illustrate the simple sample tools of DX10, let’s characterize the performance of a motor-shaft supplier. The data, shown below, is a measure of the endplay:

61, 61, 57, 56, 60, 52, 62, 59, 62, 67, 55, 56, 52, 60, 59, 59, 60, 59, 49, 42, 55, 67, 53, 66, 60. The purchaser of this part needs the mean, standard deviation, and 95% confidence interval of this vital attribute in order to make an informed decision on whether it meets manufacturing requirements.

From the **Factorial** tab select **Simple Sample** and, as shown in the screen shot, enter the **Response Name “Endplay”** and **Rows 25** for the number of observations. Then click **Continue**. The program then presents a blank data entry sheet—a “design layout.”

Either type in the above data now or open the file “**Simple**

Sample-Motor Shaft.dxp” that provides it pre-entered. Now proceed with the analysis by going to the **R1: Endplay** node and pressing forward to the **ANOVA** tab. Design-Expert then presents the needed statistics as seen here.



Check out the graphs under **Diagnostics** (run 20 bears watching as you will see by changing to the Externally Studentized scale for the Resid vs Run chart) as well as the 95%-confidence-banded model graph copied out to the right. Also, take a look at the tools under the **Post Analysis** node for **Point Prediction**, in particular the tolerance interval, a very useful statistic for a purchaser who needs to establish incoming specifications.

This concludes our feature tour of simple sample tools in DX10. Feel free to explore other tools. If you need more information at any time, press **shift + F1** for **Tips**, **Screen Tips** off the main menu or push the light bulb icon.

