Variance Study

Nexus Inc. Quarter 6

YOUR TASK

If the variance study was purchased last quarter, the results are in the Workspace. Pay attention to the shift and variance in the production process.

Analyze the Gauss curves. After you have completed all of your quality control improvements, the curves should fall well within the vertical lines and be tall and narrow in shape.

It is not necessary to repeat the variance study.

Definitions:
Shift indicates that a component has an average performance substantially different from the target performance (i.e., the diameter of a shaft averages 2.2 cm while the target is 2.0 cm).

A high **variance** value indicates that there is a great deal of variation in the performance measures (i.e., the diameter of a shaft varies from 1.8 cm to 2.4 cm where the acceptable variation is from 1.9 to 2.1 cm).

If either the shift or the variance is too great, then something is seriously wrong with the production process.

The **Gauss curves** provide a pictorial representation of the shift and variance for each critical component. The two vertical lines represent + and - 3 standard deviations. The goal for all well-tuned production operations is to fall within + or - 3 standard deviations. If the curve is wide and flat, it indicates high variance. If it is off-center to the left or the right, it suggests a high shift from the desired performance level.