

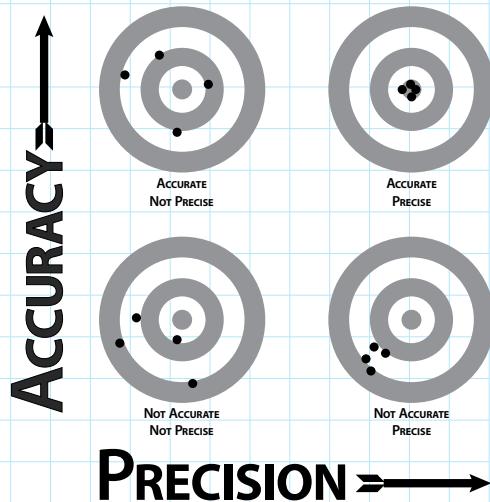
CRAFTSMAN'S CRIBSHEET

NUMBER
70

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A Glossary of Basic Gaging Terminology

Accuracy - How close a measurement by the gage comes to the true value of the quantity being measured.



Reproducibility - The variation in measurements obtained from the same gage by different operators measuring identical quantities on identical parts.

Resolution - The ability of the gaging system to detect and reliably indicate even small changes in the quantity being measured.

Stability - The difference in the average of a number of sets of measurements taken with the same gage, on the same parts, over different periods of time.

Tolerance - Allowable deviation from standard. Tolerance implies an allowable or acceptable deviation from the nominal value.

Bias - A systematic variation in the values returned by a gage.

Calibration - An operation comparing values from a gage to a known standard.

Error - Difference between the actual value of the quantity being measured and the measurement returned by the gage. (Interesting fact, the original Latin meaning of error was "to wander about.")

Linearity - Difference in the bias values of the gage throughout the full operating range of the gage.

Precision - The closeness of approach of each of the measurements to the average of all of the measurements.

Repeatability - The variation in measurements obtained from the gage by a single operator measuring identical quantities on identical parts.



Many people confuse accuracy for precision. Accurate measurements require precision, but precision measurements do not ensure accuracy. Accuracy describes "close to true value; precision describes repeatability of obtaining the measurement." When gage accuracy errors are small, typically, we look at repeatability or reproducibility issues. When we find relatively large or unexpected errors, we should look for an untrained operator, worn gage, improper calibration or error in the master used to set the gage.

All Craftsman's Crib sheets are available for viewing and download at pmpa.org/knowledge-tools/craftsmans-cribsheets.