IQL Independent Quality Labs, Inc.

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Machine Performance Grading and Correction Training

conducted by IQL Independent Quality Labs, Inc.

Course Abstract

This three-day course on Machine Tool Performance Applications provides the fundamentals for grading the required performance of machine tools, testing to meet these grades, and correction techniques to improve performance.

Classroom lectures provide an introduction to metrology principles and on-machine demonstrations of tests from the latest ISO 230 Standard using Electronic Levels and Gage, Laser Interferometer, Telescoping Ball Bar, and Spindle Analyzer complement the fundamentals.

Manufacturing Engineers and Technicians focusing on machine tool productivity will benefit from this course.

Visit http://www.iqlinc.com/training/mpgc.htm for full course details.

What You Will Learn

By attending this information-packed program, you will…

- assign machine performance grades (AAA to C) based on manufacturing needs and machine age
- assess, characterize and understand the accuracy errors of machine tools
- identify the necessary tests for specific machine errors and select the appropriate test equipment
- create specifications based on standards
- prescribe acceptance test procedures
- compare the accuracy of similar machines and predict performance
- make informed purchase decisions
- discover the importance of proper foundations and machine mounting
- understand and measure environmental effects
- identify adjustments to improve performance
- understand the relationship between machine performance and on-machine measurement

Basic Skills / Prerequisites

To attend this course, you should have a familiarity with machine tools (lathes, milling machines, turning centers, machining centers, etc.) and their functions, terminology, and applications. You should also be proficient with shop level math (algebra, geometry, trigonometry, etc.). Note: some of the information will be a review for past Machine Tool Metrology 101 Training participants; however emphasis will be on understanding machine performance and creating informed specifications.

Instructor

Robert (Buz) Callaghan, MSME, is the Senior Engineer at IQL Independent Quality Labs, Inc. He has over 48 years experience in precision tool and machine design and metrology. Buz has published numerous papers on the accuracy of CMMs and CNC machine tools. He is an active member of the ASME standard committees: B5.54 “Methods for Performance Evaluation of Computer Numerically Controlled Machining Centers,” and B5.57 “Methods for Performance Evaluation of Computer Numerically Controlled (CNC) Lathes and Turning Centers,” as well as a supporter of ISO 230 Test Code for Machine Tools. His expertise is sought after by those in the manufacturing community who want to understand machine behavior.

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