

## We guide manufacturers to meet their machine tool capability needs.

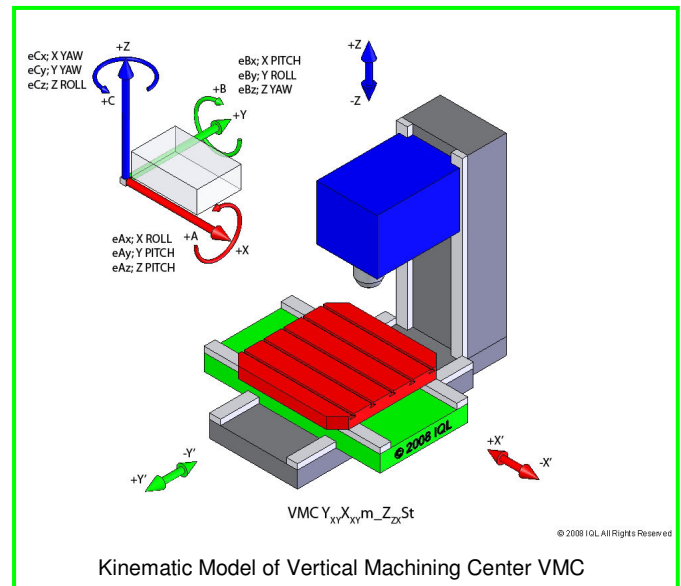
Since incorporation in 1985, Independent Quality Labs, Inc. (IQL) has improved productivity for leading manufacturers by focusing on manufacturing equipment capability and its impact on achieving desired part tolerances. Over time we have accumulated a comprehensive knowledge base of actual machine performance and specific machine design characteristics, which has become the foundation to support our research, development and service activities.

**IQL is a developer, user, and supplier of Management Tools for the complete Machine Tool Product Lifecycle.** With these Machine Tool Product Lifecycle Management (PLM) Tools, IQL provides information to manage machine purchase, installation, application, maintenance, and relocation. This information is used to verify the capability of machine and parts suppliers upon selection and machines upon installation. These PLM tools are also used to establish quality and/or maintenance requirements for periodic capability verification, and to identify and verify correction of capability-limiting machine errors throughout the machine lifecycle. Managing the whole machine tool lifecycle and implementing a maintenance plan, rather than applying short-term fixes to hastily return to production maintains the accuracy and increases the availability, life and value of the machine.

### IQL has developed two unique Machine Tool PLM Tools:

Locus<sup>®</sup> DFMx (SolidWorks<sup>®</sup> Add-in for determining machine capability requirements from 3D annotated models with toleranced features) and Locus<sup>®</sup> eM (comprehensive software for measurement, analysis, diagnostics and correction of machine tool capability-limiting errors). These tools have been applied to many IQL projects for aerospace, military, automotive and power customers for the purchase, installation, repair, and relocation of over 500 machine tools.

We work with DoD and DoE facilities, advanced local and global manufacturers including ABM Gulfstream, BAE, BMW, Boeing, Caterpillar, Franklin Fueling Systems, GE, GM, Kohler, Lockheed Martin, Mitsubishi, Northrop Grumman, Okay Industries, Pratt & Whitney, Primus International, Siemens, Sikorsky, Tecomet, Timken, Volvo, W.L. Gore, Westinghouse, and many others. In addition, we actively contribute to the development of national and international standards for the testing of machine tools and inspection equipment: ASME B5.54 (Machining Centers), ASME B5.57 (Lathes & Turning Centers), and ISO 230 (Metal Cutting Machine Tools).



**IQL Products:** Locus<sup>®</sup> DFMx (SolidWorks<sup>®</sup> Add-in), Locus<sup>®</sup> eM machine tool metrology (measurement) software, and standard machine test kits.

**Representative Products:** Renishaw and Mahr Federal machine metrology products, Lion Precision spindle error analyzer, Starrett True-Stone granite and CoorsTek ceramic artifacts.

**IQL Services:** IQL SuperTune<sup>™</sup> enhanced Volumetric Capability of Haas<sup>™</sup> vertical and horizontal machining centers, machine tool calibration, manufacturing process modeling, machine optimization, evaluation and adjustment, procurement specification support, machine capability evaluation, manufacturing process diagnostics as well as machine design reviews and recommendations.

**IQL Training:** Comprehensive machine tool metrology and customer-tailored training in the latest methods for manufacturing process and machine tool evaluation. An extensive offering of product-complementary courses for instruments and artifacts, including lasers, electronic levels, gages, ball bars, rotary calibrators, master squares and standard kits used for machine testing as well as standalone software products for measurement and evaluation.