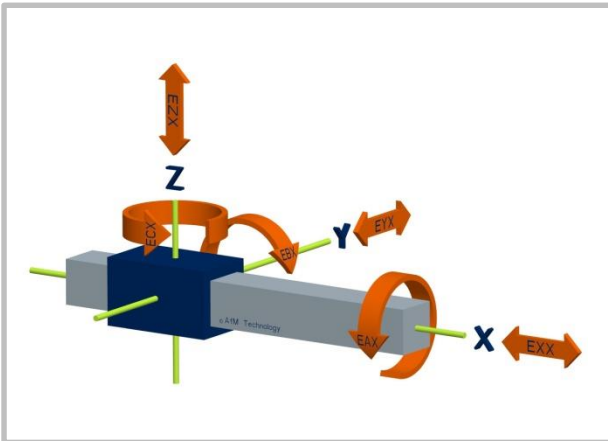


Volumetric Compensation of machine tools with HEIDENHAIN iTNC 530

Don't be satisfied with less!



Customers

Our customers are machine tool builders, CNC control producers, retrofit companies as well as users incorporating machine tooling in their production line.

State-of-the-art

The accuracy of parts being produced is governed by the accuracy of the cartesian axes (X, Y, Z) of the machine tool.

The conventional methods used to establish machine tool deviations result in lengthy down time and therefore high costs. In most cases an additionally mechanical correction of the machine tool axes is necessary to resolve any deviations.

Innovation

With LaserTRACER Systems we are measuring the volumetric deviation in the whole workspace of the machine tool. The evaluation will be given as a protocol with diagrams for each of the systematic deviations. Positioning, straightness, squareness, yaw pitch and roll errors will be completely measured.

The software-option **KinematicsComp** from company Heidenhain allows a process correctionsfile created by AfM to be entered directly into the **Heidenhain iTNC 530** and from there it can be worked on online.

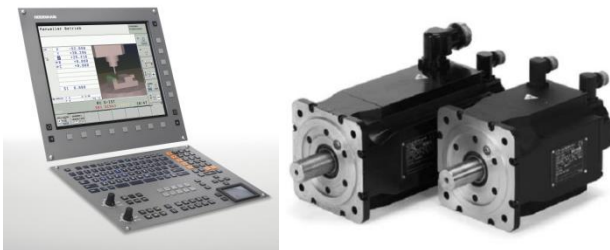
This results in a **noticeable improvement of the volumetric accuracy in the entire workspace of the machine tool.**

Hereby the complicated mechanical correction of the machine tool can often be avoided.

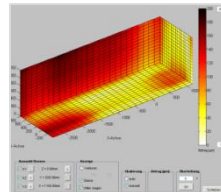
Your advantages

- Fast error mapping reduces down time and therefore costs
- An increase of volumetric accuracy up to 85% through KinematicsComp in the Heidenhain iTNC 530 control unit
- Usually no mechanical correction is necessary
- Interchangeability of CNC-Programs between different machines
- Higher machine availability by Condition Monitoring

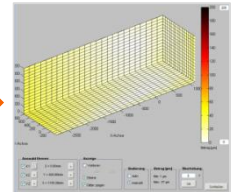
Volumetric Compensation of machine tools



3D deviation
without Compensation



3D deviation
with Compensation



Use of the most up-to-date laser technology

- Automated self-tracking laser interferometer with temperature stable construction.
- Highest accuracy through patented reference sphere.
- No complicated fine alignment on the machine tool.
- 4 – 6 measuring positions in the workspace of the machine tool for the evaluation of the complete volumetric deviation are required.
- Total time: approx. 4 - 6 hours
- Resolution: 0,001 μm
- Accuracy: 0,2 μm + 0,3 $\mu\text{m}/\text{m}$
- Range: 0,2 m – 15 m
(extendable by mathematical superposition)
- Principle: Multilateration

Our Services

- Fast, cost-effective volumetric machine tool analysis
- Documentation of actual conditions
- Modification of the machine kinematics for iTNC 530
- Installation of KinematicsComp
- Sale of KinematicsComp and KinematicsOpt options
- Creation of compensation files
- Verification of the compensated machine tool
- Standard machine calibrations
- Mechanical service and adjustment
- Training for LaserTRACER systems

AfM
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