Real-Time Collision Avoidance
Component

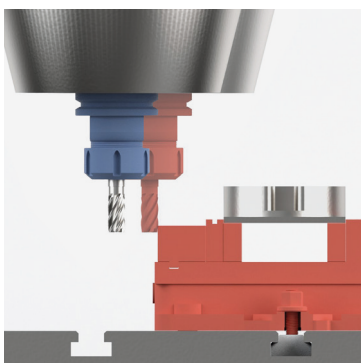**ModuleWorks**
Get There Faster.

The ModuleWorks real-time collision avoidance system (CAS) is integrated directly into the CNC controller/HMI to avoid collisions during the machining process or during manual operations.
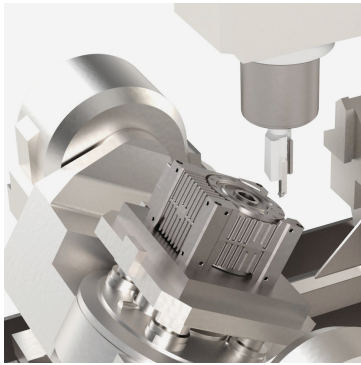
CAS Virtual Machine Display
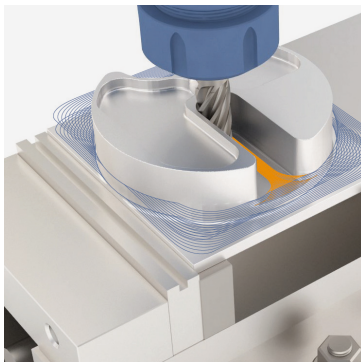
Key Benefits

Less machine downtime, lower repair costs and increased machine productivity.

Protect your high-value production machines against:
- Operator errors
- Programming errors

Job Setup

General Features

- Fully integrated realistic virtual environment simulating multiple workpieces, turrets, jaws, clamps, fixtures and tools
- Unlimited axes configurations – forward kinematic supports multitasking machines with multiple turrets, channels and robot kinematics
- Supports Windows and Linux x86 and x64
- Supports high-frequency interpolated position data

Collision Detection

Material Removal Simulation

- Supports AUTO, MDI and JOG operation modes
- Collision avoidance based on interpolated axes positions as calculated by the CNC; no G-code parsing required
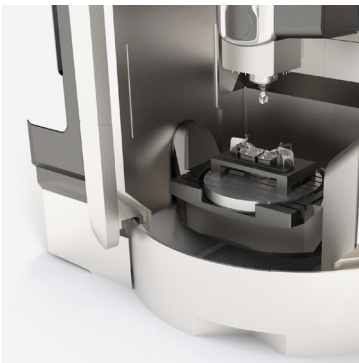- Look-ahead, predicted position data for collision avoidance
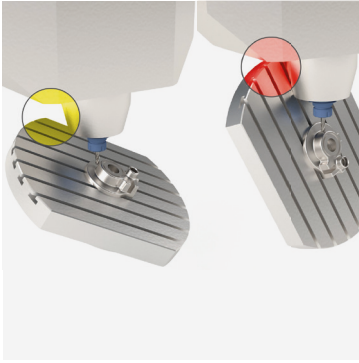
Approaching and Collision Detection

CAS (Collision Avoidance System)

- AUTO mode cycle time remains unaffected when no collisions are detected
- Dynamic feed control in JOG modes
- Collision-free tool retract
- Intuitive user experience with multi-touch-enabled user interface

Digital Twin

Integration

- Can be integrated as a modularized component or standalone product (depending on CNC control)
- Out-of-the-box solutions available, e.g. for FANUC through the FOCAS library or for Siemens 840D sl CNCs
- Close integration support and development services for faster time-to-market
- Advice and support throughout the entire design and implementation phases
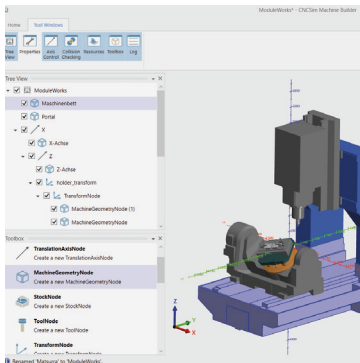
Digital Twin Creation

Machine Builder & Job Setup

- The machine builder enables OEMs to easily create kinematic models
- Uses standard STL files for 3D geometry descriptions
- Job Setup UI supports 3D data import for tools, stocks and fixtures
- Integrated easy-to-use tool management

For information on other CAD/CAM components, including 3-axis and 5-axis toolpaths, visit:
www.moduleworks.com

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