AdvantEdge
Virtual Machining & Engineering Analysis

Easy To Use
Designed for Non-FEA Experts
Process Specific Inputs
Automatic Meshing

Get To Market Faster
Reduce Design Iterations
Fast Results
Automated Analysis

Test New Ideas
Run Simulations Simultaneously
Quick Decision Making
Reduce Prototyping

Increase Tool Performance
Lower Tool Stresses & Temperatures
Improve Material Removal
Reduce Tool Wear

Broad Industry Support
140+ Validated Material Models
Turning, Milling, Drilling & More
Aerospace, Automotive, Medical & Energy

SEE MORE. KNOW MORE.
Machining Modeling Technology

AdvantEdge is used to understand the "whys" of tool performance by providing a virtual testing environment for evaluating tool designs, machining process parameters and new materials. Users efficiently and affordably recognize promising prototypes and optimal cutting conditions while reducing design iterations and trial-and-error testing.

AdvantEdge is a valuable tool for manufacturers for the design of milling, grooving, boring, sawing, broaching, drilling, turning and gear machining processes. These can be modeled as a simplified 2D model for high resolution cutting edge modeling or as a fully detailed 3D setup for complete machining processes.

To make reporting results easier, post-processing includes a machining specific report generator that significantly reduces time spent documenting results, conclusions and standardizes work between users, making distributing results to management and customers much easier.

How it works

- Define tool geometry parametrically or import from CAD program
- Select tool and workpiece materials
- Input cutting conditions
- Run simulations
- Compare simulation results to optimize cutting conditions or tool geometries
  - Analyze temperature and stress profiles to gage reductions in tool wear
  - Use chip formation to predict improved chip evacuation and chip breakage
  - Evaluate force plots to lower cutting forces and power consumption

140+ Validated Material Models

AdvantEdge has an expanding library of 140+ standard materials that have been developed and validated by Third Wave Systems. Through a proprietary material characterization process materials are physically tested and resulting models are experimentally validated. This process ensures confident results and analysis.