NC Program Optimization with FORCE-TURNING

Force-Turning Optimization
CGTech’s VERICUT Force is a physics-based NC program optimization software module that analyzes and optimizes cutting conditions throughout NC program operations.

VERICUT Force makes the most effective NC program for the given material, cutting tool, and machining conditions. The results are significant time savings, and improved cutting tool and machine life.

Analyze
VERICUT Force allows NC programmers to quickly and easily visualize what is happening cut-by-cut in the NC program as the tool contacts the material. VERICUT Force lets you see underutilized cutting conditions, excessive forces, metal removal rates, power, torque, and tool deflections.

A single click provides a review of the NC program and a visual analysis in the graphic review window. This analysis provides a view of the machining before running the NC program on the actual machine. VERICUT Force provides the user with a proactive analysis of NC programs, making them right the first time.

Optimize
Optimization is not just about going faster. VERICUT Force makes optimizing NC programs fast and easy, using a balanced approach to calculate new program feed rates and tool positions. This minimizes time cutting in air, maximizes chip thickness, and simultaneously limits excessive cutting forces or spindle power requirements.

ALL NC programs, new or old, can be optimized with Force to run as efficiently and safely as possible. Force is also available on mill & mill-turn machines.

Why VERICUT Force?

Maximized Productivity & Savings
Any Tool, Any Material

Maximized Cutting Tool Performance
Any CAM System, Any NC Program
**Materials**
CGTech creates Force Material Files with on-machine testing, a Kistler dynamometer, data acquisition system, and Force Calibration software. CGTech’s Force Material Catalog contains more than 100 materials.

- **P** ISO P = Steels
- **M** ISO M = Stainless steels
- **K** ISO K = Cast irons
- **N** ISO N = Non-ferrous materials
- **S** ISO S = Heat resistant super alloys
- **H** ISO H = Hardened materials

**Pre Post-Processing Optimization with OCC**
The VERICUT Force Optimized CAM Cuts (OCC) interface allows users to update and adjust toolpaths directly in their CAM systems. Optimized toolpath data is integrally part of the CAM operations. This creates the opportunity to generate an optimized NC program from VERICUT when post-processing.

**Features**
- Optimize Control
- Force Charts
- Compare Files
- Savings Calculator

Analyze or Optimize the part and material in the NC program

Charts with cut-by-cut data of resultant Forces, Power/Torque, Chip Thicknesses, Material Removal Rates, Tool Deflections, and Feedrates

Side-by-side comparisons of the original NC program with the Force optimized NC program

Force calculator shows time and revenue savings

Machining improvements are a balance between tool life and speed. Force optimization lets you match your machining goals.