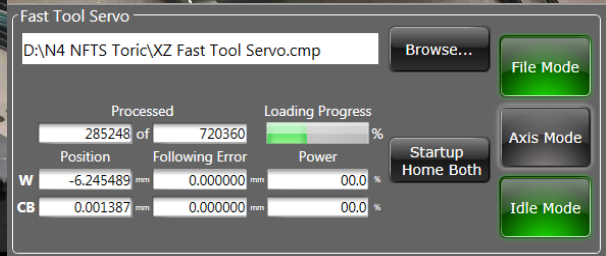
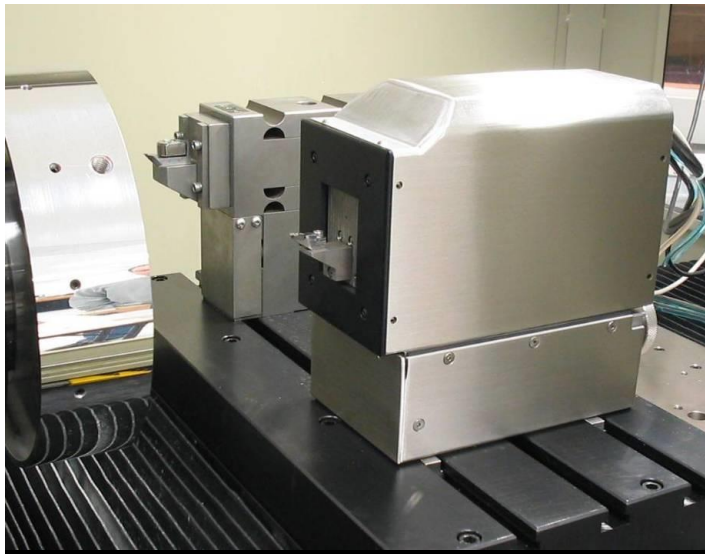


## **NFTS-6000<sup>v2</sup>** Fast Tool Servo

For use with Nanotech 250UPLv2, 450UPLv2 & 650FGv2 Systems

### Technological Advancements

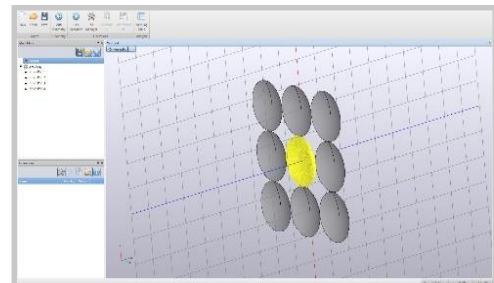
- Closed loop design with up to 6mm of total stroke
- Ability to chain up to 5 FTS program files for overlaid operation
- **NanoSMART**® HMI module on machine's controller for ease of operation
- Control System: Delta Tau Power PMAC
- **NanoCAM4<sup>3T</sup>** programming software
- Voice coil motor with fully constrained porous air bearing design and integrated counter balance
- Linear scale feedback with sub-nanometer resolution and home sensor
- Sub-nanometer programming resolution
- Micro height tool adjustment mechanism with 0.14  $\mu\text{m}/\text{degree}$  (5.6 $\mu\text{m}''/\text{degree}$ ) resolution
- 19X Increase in file size handling (up to 4,000,000 points) compared to previous generation
- 4X faster load line speed (20,000 points / second) compared to previous generation
- File inputs : Parametric Surface Definition, Cloud of Data Points, Bitmap, PNG, Step, IGES, User Specific



## **NanoCAM4<sup>3T</sup>**

### NFTS Programming with NanoCAM4<sup>3T</sup>

Our most advanced **NanoCAM4 Module 3T** programming software is used to generate the CNC code for this closed loop NFTS-6000.  
(See *NanoCAM4 brochure* for details)



## NFTS-6000<sup>v2</sup> Specification Overview

General	Description
System Configuration	Double Counterbalanced Axis, Air Bearing Fast Tool Servo. Fully integrated into NanoSMART controller for ease of use. The fast tool servo is actuated using the lathe spindle feedback and the axis position feedback. The NFTS-6000 can be integrated on the Nanotech 250UPLv2, 450UPLv2, and 650FGv2
Functional Performance	Shape: Toric with R1 = 7.4mm; R2 = 7.5mm; Aperture = 12.5mm Material: Brass Form Accuracy (P-V): ≤ 0.3 μm Surface Finish (Ra): ≤ 6.0 nanometer

Mechanical Specification	
Bearing Type	Fully constrained porous air bearing
Counterbalance	Integrated in the unit
Total Travel	6000μm (6mm)
FTS Unit Dimensions	Width 100mm, Length 220mm, Height 120mm
Horizontal Stiffness	58 N/μm (330,000 lbs./in.) @ 7 bar (100 psi)
Vertical Stiffness	58 N/μm (330,000 lbs./in.) @ 7 bar (100 psi)
Drive System (Motors)	Voice Coil Motors
Tool	Uses insert type diamond tools
Tool Adjustment Total Travel	+/- 2.58 mm, utilizing a Z-Wedge type stage under the FTS unit
Tool Adjustment Resolution	0.14 μm/degree (5.6μ"/degree)

Electrical Specification	
Feedback System Resolution	0.015 nanometer
Programming Resolution	Sub-nanometer
Amplifier	Linear Amplifier
Fault Protection	Current Limit, Low Air Pressure, Encoder Fault

Software Specification	
Product (Included with NFTS-6000)	NanoCAM4 3T programming package
File Input	Parametric Surface Definition, Cloud of Data Points, Bitmap, PNG, Step, IGES, User Specific
Tool Compensation	Tool radius compensation, rake compensation, and checks for tool clearances
Surface Analysis	Curvature analysis and Frequency analysis
Surface Smoothing and Filtering	1D and 2D data filters
Post Processor	Multiple independent surface profiles

Utility Requirements	Air	Electrical	Dimensions
For optimal cutting results, facility thermal stability should be held within ±0.5°C (±1.0°F)	7 to 9 bar (100 –130 psi) < 10 liters/min (0.35 scfm) Dry to 10°C pressure dew point and pre-filtered to 10μm - Supplied from the machine	- Supplied from the machine	FTS (mm) 100W x 220L x 120H  Electronic Enclosure (mm) 250W x 650L x 520H

Warranty	1 year full parts and labor warranty

*Note: In an effort to continually improve our product performance, specifications are subject to change without notice.*