RESONETICS

THE LEADER IN LASER MICRO MANUFACTURING FOR LIFE SCIENCES

RapidX250 Upgrade

Prepared for UC Irvine

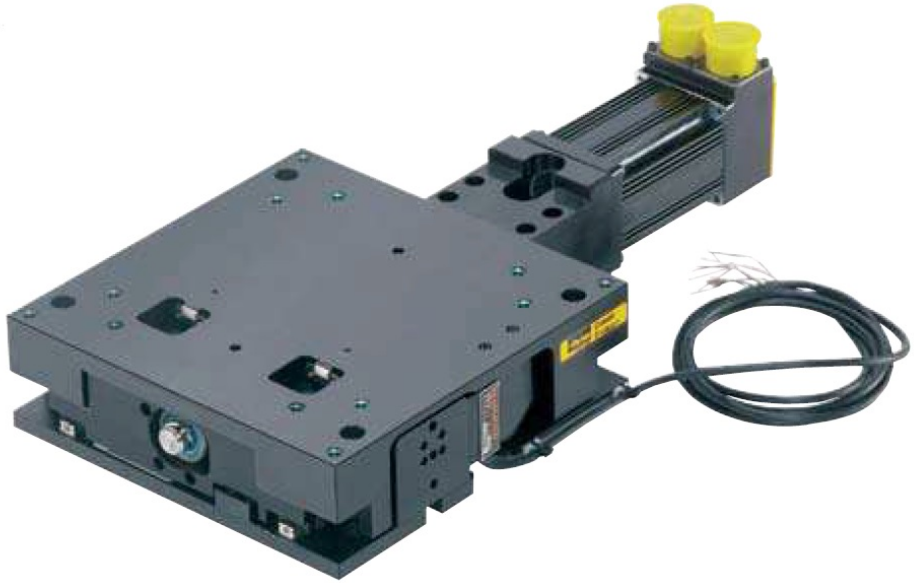
June 2017

Upgrade Summary

- Rotary stage
- Vertical lift Z stage
- Computer
- Motion controller
- Software (GUI)

Vertical Z stage (ZP200)

- Wedge design with
  - precision ball screw (5mm lead)
  - Recirculating square rail bearing
  - Stepper motor
- 25mm travel
- Max velocity: 100 mm/s
- Repeatability: +/- 3 µm
- Max Load (15 kg)



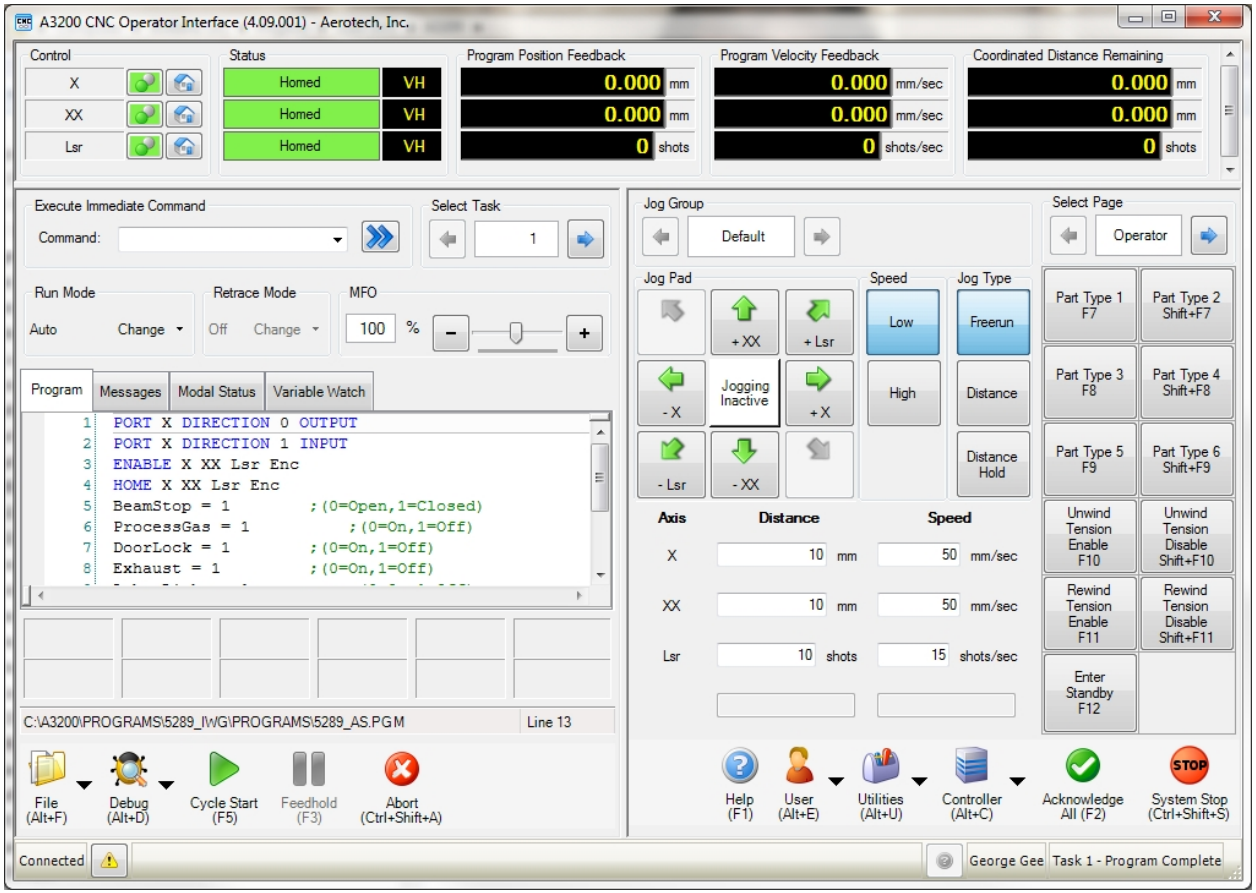
Rotary Stage (RT206)

- 6” diameter platform
- Two angular contact circular bearings races
- Gear drive (45:1 ratio)
- Stepper motor
- Max. speed: 0.3 rev/sec
- Repeatability: 0.3 arc min (unidirectional)
- Max. Load: 68 kg

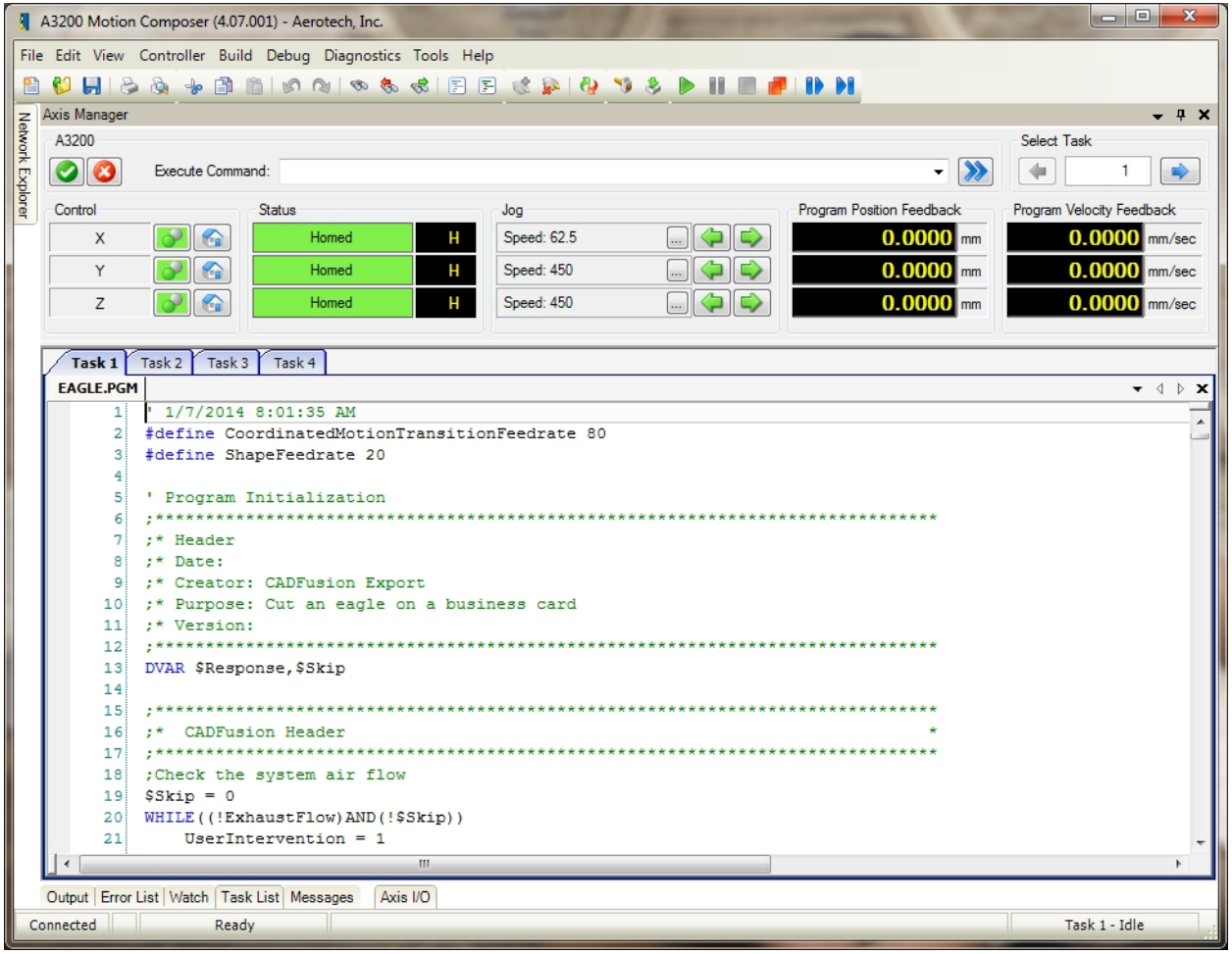
Computer, Motion controller and software

- New computer (Windows 7 OS)
- A3200 modern motion controller, expandable to 32 axis of motion
- Motion Composer interface and CNC Operator Interface
- Advanced motion command capabilities:
  - Industry standard G-Code like programming
  - Point to point motion
  - Linear and circular interpolated motion
  - Velocity profiling and acceleration limiting
  - Smooth path generation between user-defined points
  - Laser control commands
  - Software flow control (conditional, branching, etc..)
  - Variables and mathematical functions
  - Laser firing commands
  - Status windows
  - Operator input pop-up window

CNC Operator Interface



Motion Composer GUI



CAD Fusion CAD/CAM Interace