**Hoektron CNC Design Spec Rev. A**

**Overall Design Specifications**

* Total Weight < 20lbs
* Z on X on Y Gantry System
* Fixed, aluminum extruded table
* Aluminum slab (or better) construction
* Fully enclosed operation with door + interlock.
* Enclosure of metal or high impact plastic (safety)
* Fully automated with XYZ + Tool Height endstops.
* E-Stop and Power Switch on front of machine.
* Good spindle with low runout, easy to change bits.
* NEMA23 stepper motors.
* Quality guide rails and bearings.
* Capable of milling wide range of items:
  + foam
  + wax
  + plastics
  + aluminum
  + brass
  + PCBs
* Main interface is Android tablet over USB (filesystem)
  + optional computer hookup (USB or Ethernet).
  + Iphone app would be good too.
* Includes a place to rest the tablet when not actively controlling it.
  + This should also charge the tablet over USB! (Bonus!)
* Some way of human powered transportation (handles)

**Positioning System**

* X axis travel of 250-300mm and speed of 2000mm/min
* Y axis travel of 200-400mm and speed of 2000mm/min
* Z axis travel of 50-100mm and speed of 2000mm/min
* XYZ Accuracy of <= 0.05mm
* XYZ Backlash of <= 0.05mm

**Electronics System**

* Accepts 100-230VAC from standard wall power.
* Bipolar stepper drivers driving 2.5A/phase @ 32VDC
* Relay capable of controlling spindle on/off (DC / AC?)
* microSD card slot (not user-accessible)
* USB mini connector (High Speed / USB2.0)
* Ethernet (RJ45)
* Support for endstops, tool zeroing, and door interlock
* On/Off switch to cut all system power.