



Puzzazzle, Inc.

Memo

To: Manufacturing Design Teams
Date: 2004-Apr-8
From: Ralph Stirling
Subject: Puzzle piece manufacturing system specifications

Summary

The 2004 model burr puzzle piece manufacturing systems must meet specific criteria for entry and exit of blocks, part quality, dust collection and safety.

Initial Criteria

1. Raw material: hardwood blocks (species including maple, walnut, and cherry, possibly others) of nominal dimension 0.75 x 0.75 x 2.25 inches, +/- 0.003 (95%)
2. Machine must cut one, two, three, or four notches 0.375 inches in width and depth on a single face of the block, according to a standard digital coding scheme to be specified by week 4. Manual selection of notch position by switches or LCD panel is optional but useful. 95% tolerance is to be +/- 0.003 on cut position, width, and depth.
3. Blocks must be accepted and delivered according to the material handling standard decided at the next team meeting, such that any two machines can be configured in series to cut slots on two faces of blocks. Therefore machines must be able to accept and operate on blocks which have already had two notches in one face. Several conveyors are available for moving parts between cutting stations.
4. The machine is to be designed such that the overhead 4 inch dust collection port will efficiently extract the wood dust and shavings from the cutting operation.
5. An emergency shutoff switch will be provided that will immediately remove air pressure from the valve manifold and power from the router.

Please study these proposed criteria in preparation for the three teams meeting at lab time next Tuesday, and come with well-thought-out ideas for the design of your slot cutting machine.