

Laser Cutters for Rapid Pneunet Generation

Background

- Pneumatic networks
- Current production methods
- Limitations of current production methods

The Process

1. Create a weld path
2. Use laser cutter to trace weld path
3. Inflate using a needle and air pump
4. Test for seal completeness underwater

Description of the Work to Date

- Evaluated satisfactory laser welding settings on a translucent polypropylene
- Experimented with different geometries
- Achieved a weld durable enough to pop
- **Discovered an unexpected behavior from an established pneunet configuration**

Our Goal

- Autonomous space exploration agents
 - Rapid production → rapid prototyping
 - Low investment → high risk tolerance

The Path Forward

- Part of a larger work in autonomous exploration
- 2 components: physical and cognitive

