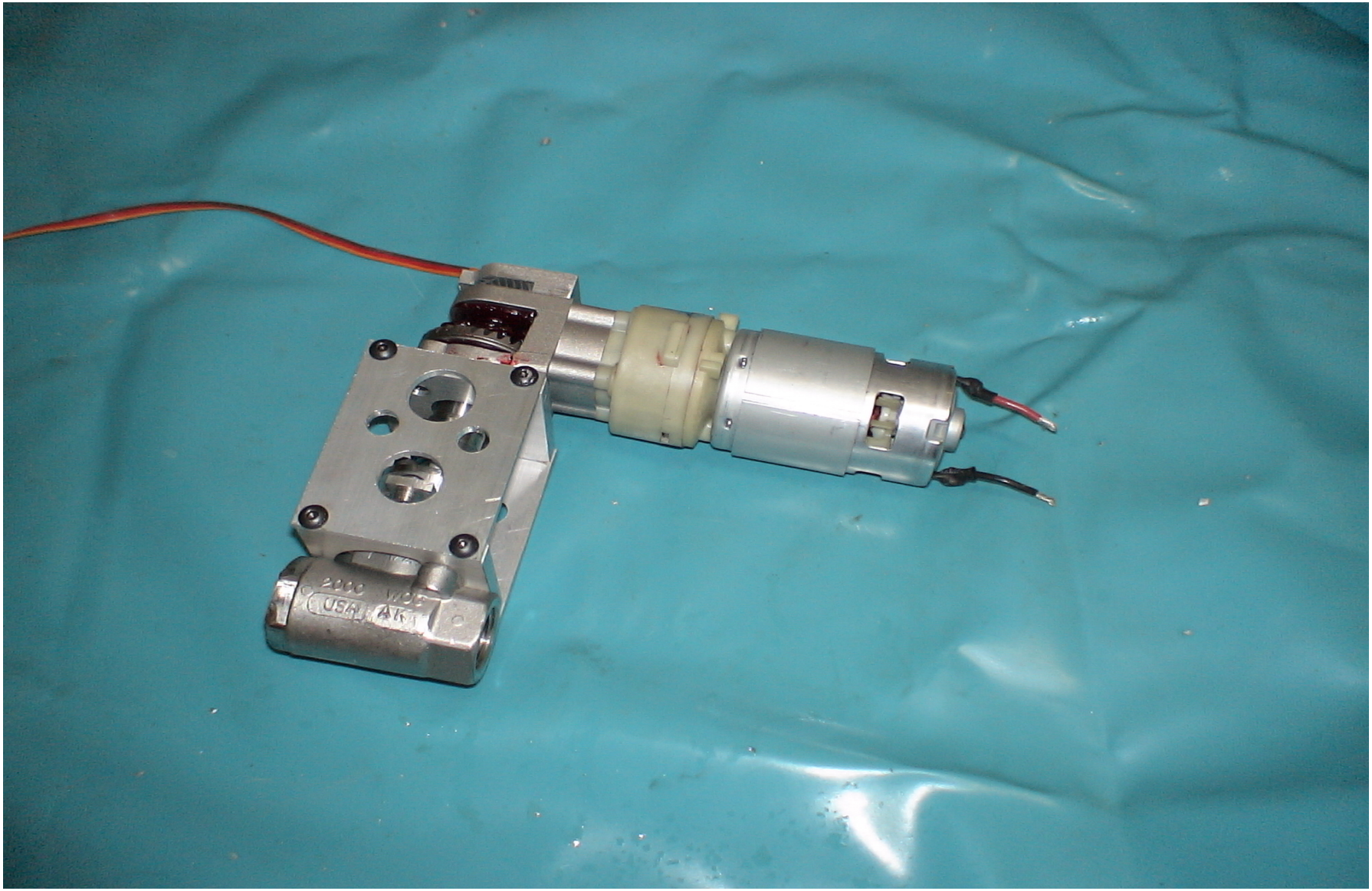
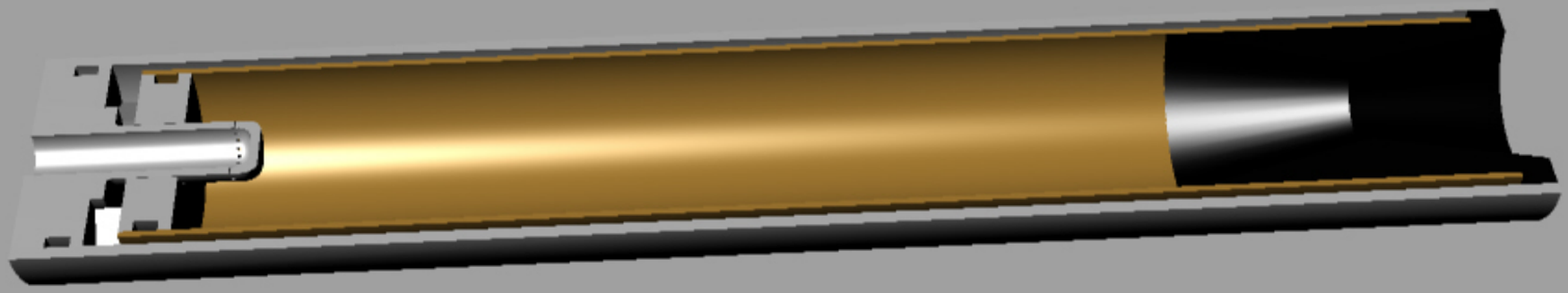
- A Small team formed in 2006 to compete at the NG-LLC.

In late 2006 we started with the basics valves:

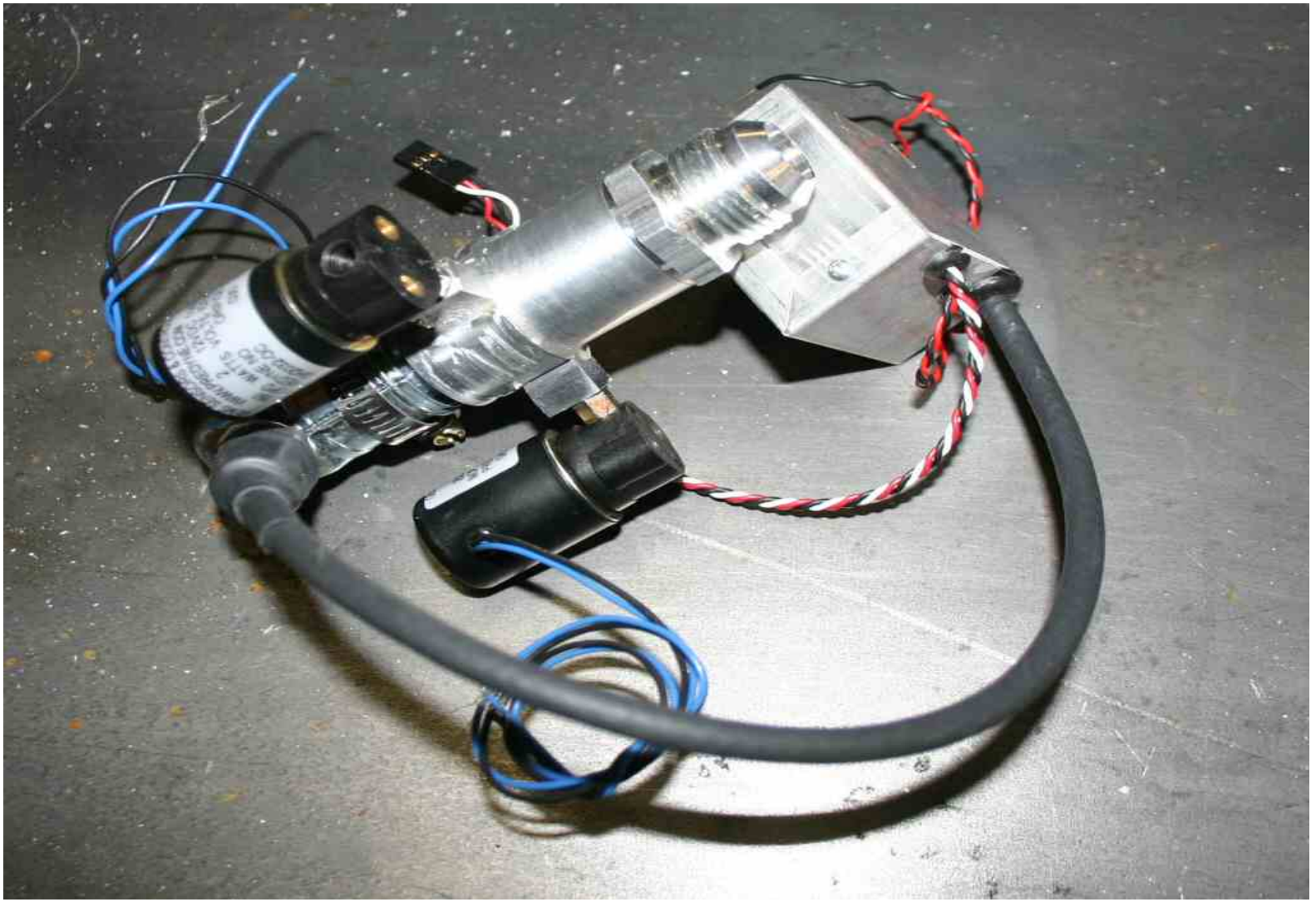


Tanks

Rocket Motors

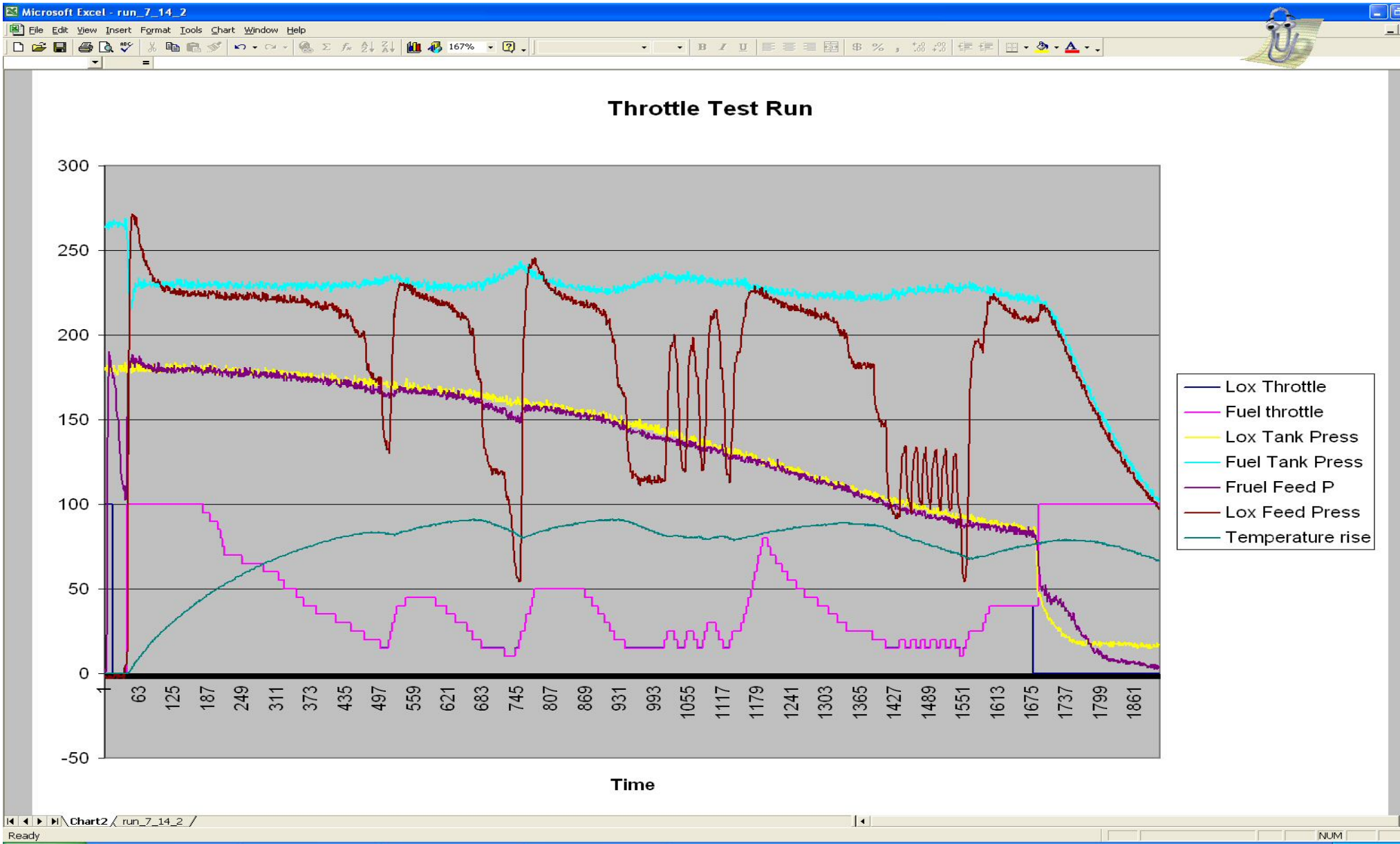


Igniter's

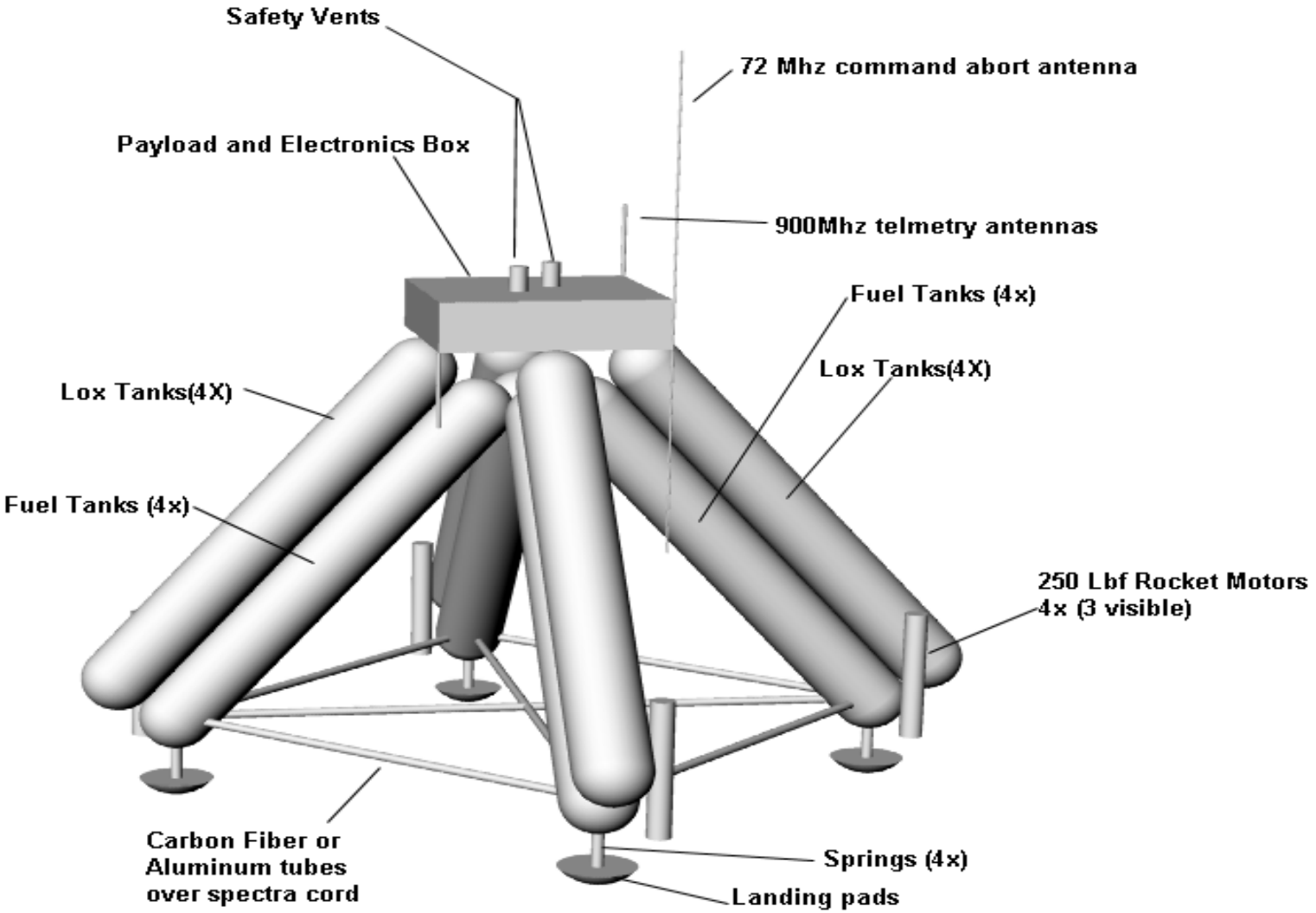


We made mach diamonds for 113 Sec

Motors work and Throttle well.



The vehicle on paper



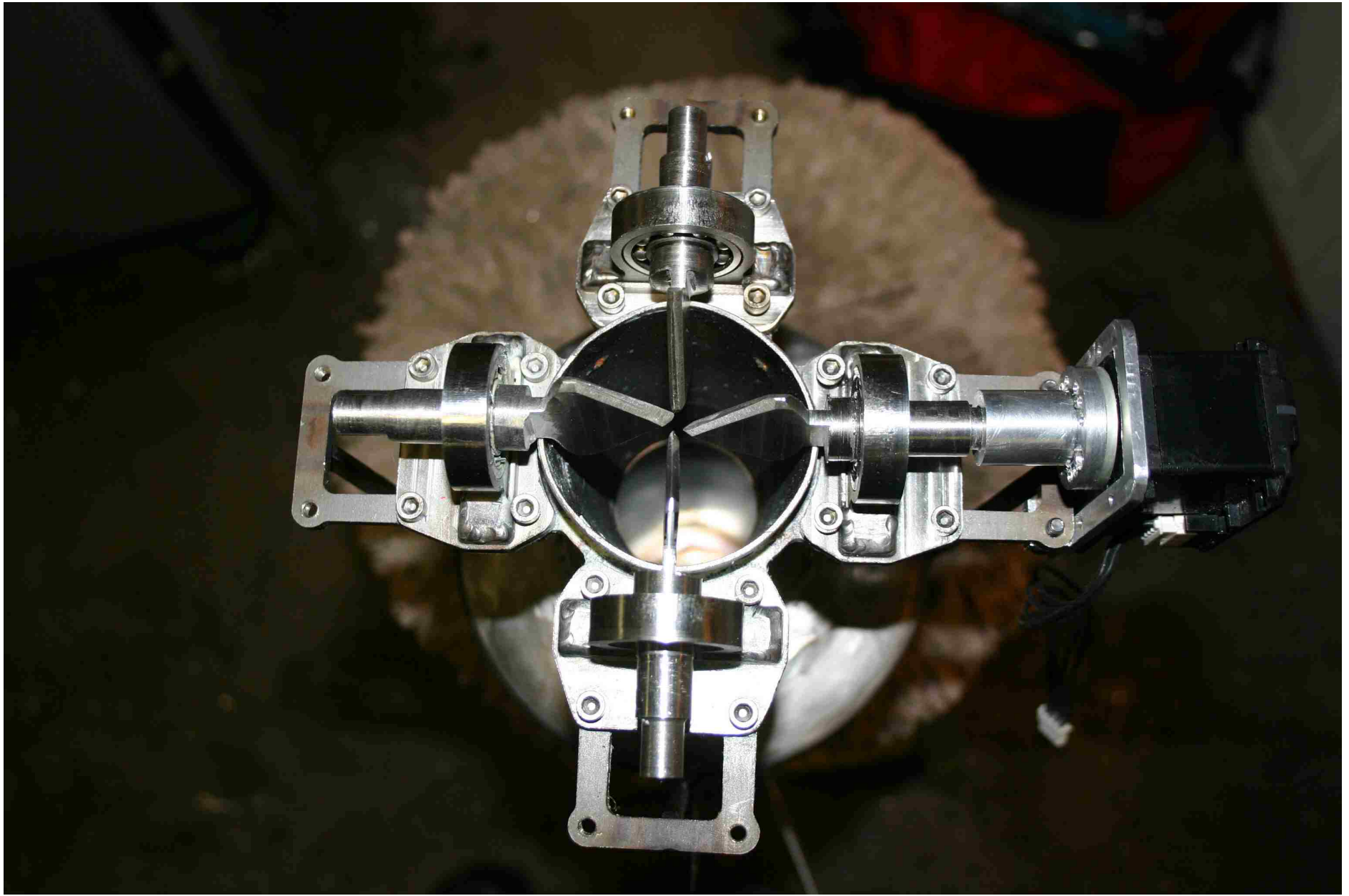
Our Vehicle

What we learned in 2007

- Keep things simple. 24+ Valves were too many.
- Small engines have small orifices
- Material properties matter
- We can build rocket motors.
- Bring a Rocket to the site, not a kit.
- The FAA is reasonable. We did 90% of an experimental permit.

Simple Spherical Tanks

Simpler Controls.



Find ways to test near home.

Test at each level of integration.

The complete vehicle.

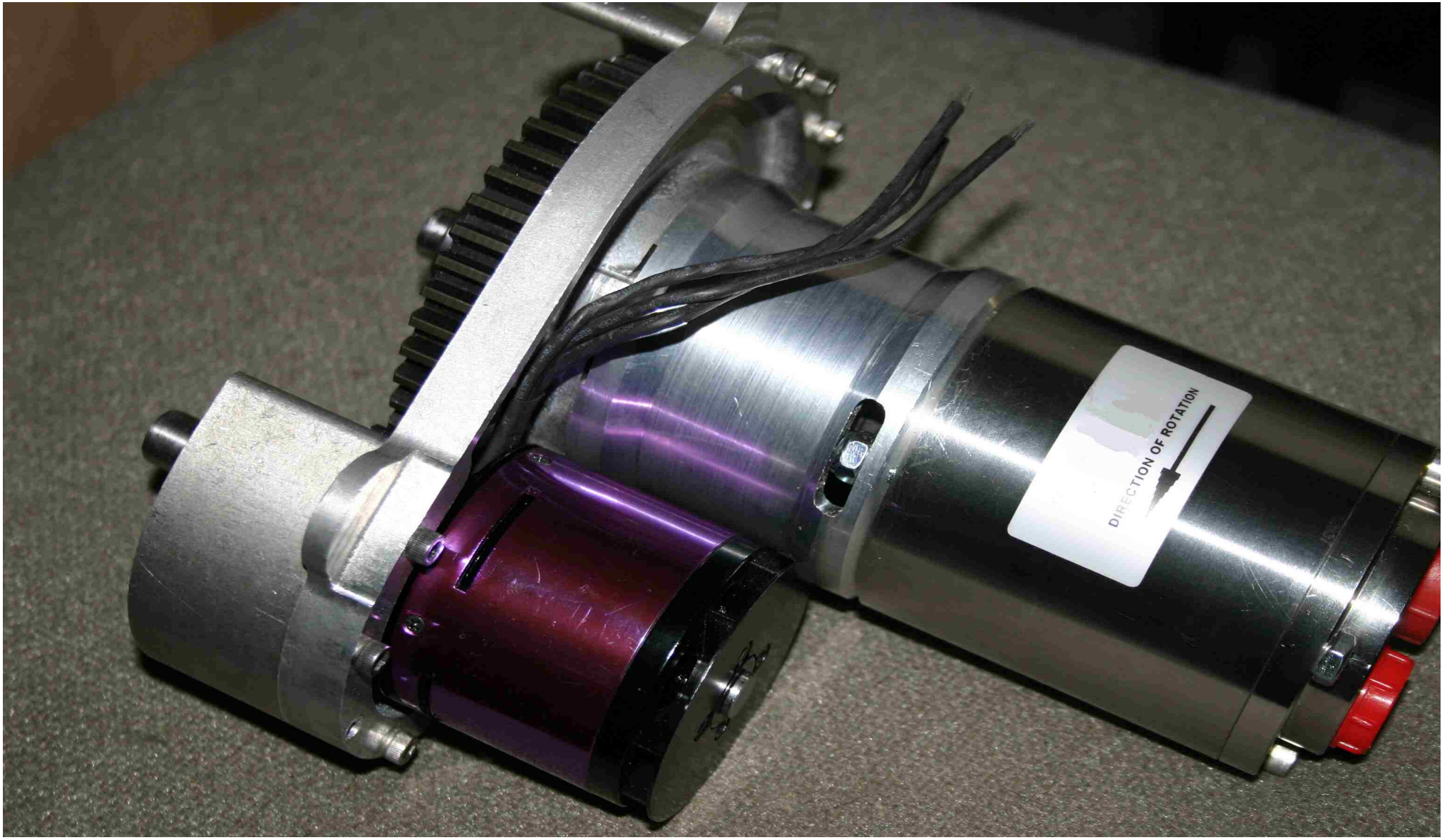
It hovers!

What we learned in 2008

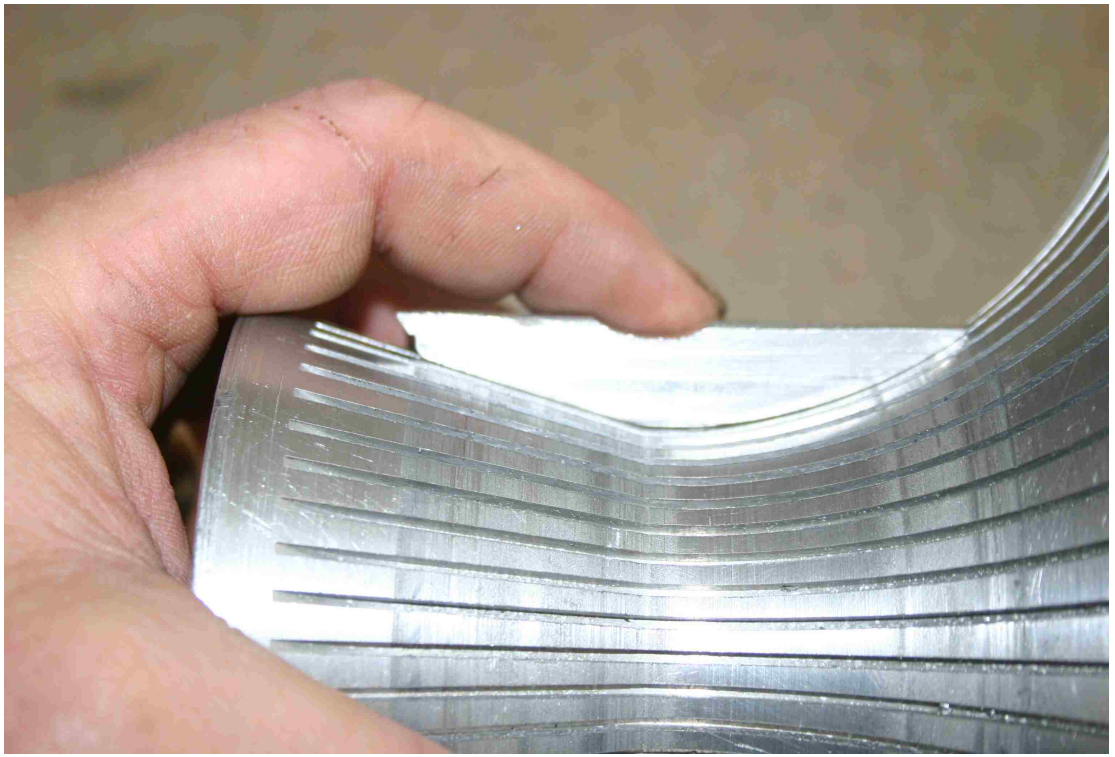
- Simpler is better
- Still lots of details to get right.
- You can't ignore performance problems.
- Test in a non-destructive way.
- Purple is not our favorite color.
- People need help, we can get paid to work on this stuff!

The 2009 Effort

Looking at Electrically pumped H2O2



Back to Regen Bipropellant



Cooling Channel Physical model

But Wait.....

- H2O2 has been easier in a lot of ways than LOX.
- Once were hooked on it, the suppliers get flaky
- To protect our progress we are preparing a peroxide sparging/enrichment system so we can control our own propellant supply.
- This has been a 6 week detour.

Sparging column

Futures

- After the NG-LLC we will still build rockets.
- The next step in the progression is to take our propulsion, guidance and control and put it in an aerodynamic package,
- The new FAA rules make this a lot easier.
- Our repackaged 180 second design has the performance to take a few Kg to 100Km and back.
- Not enough performance to hover all the way back down, so aerodynamic braking is necessary

Business Futures

- We are self funded and intend to stay that way.
- We will not sell concepts, only things we are sure we can do.
- We will sell valves, electronics, software services , any component of our vehicles are for sale.
- We would love to provide design and testing services for your pet rocket project.
- We would eventually like to sell fight services and complete vehicle systems.

Thanks

Many Thanks to the FAR organization.

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Many thanks to Charles Pooley.

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