

LATEX BALLOON VALVE

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Problem

Montana Space Grant Consortium (MSGC) is currently working with Latex Balloons, and there is no way to regulate elevation as of right now. Without some way to regulate elevation, the balloons fly up to 80,000 – 90,000 feet and burst. Having a way to regulate elevation will accomplish multiple goals: predictable recoveries, longer flight duration, more data collection, and more stable camera footage.

Solution

The solution was a balloon valve. The design consists of a servo motor (1), a detachable piece (2), a cutdown board (3), an OCCAMS board (4), a intake valve (5), a flap and foam (6), and a push arm.

How it Works

The Iridium system communicates to the OCCAMS board from a command sent from the ground. The OCCAMS board then communicates to the servo to open. The servo then pushes the push arm to open the valve. Helium rushes out and once the balloon reaches a low vertical velocity the command is sent to close.

