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Avalanche Airbag Deployment System

The original goal of this project was to explore the design options, feasibility, and function of a high pressure (compressed air) flood valve that would operate independently of regular o-ring use. The goal was to implement a metal on metal seal in such a way that a gas under 3000psi and one that could easily and readily be broken and resealed. Such a device was devised, yet proved an impractical solution from an affordability standpoint. Additionally the design would have come short of requirements when deployed in the field, due to the corrosive environment presented in winter backpack.

From there the target was re-evaluated and the goal was set as developing a design of a flood valve that used the traditionally design approach, and utilizes o-rings as a means to seal the high pressure cylinder. The main target being to minimize cost through the use of pre-manufactured components and reducing the need for custom configuration and thus dropping overall cost. The final goal is to create a system that would potentially be competitive in the burgeoning avalanche airbag market, through the use of innovative yet simplistic design approaches that consider ease of manufacturing and maintenance.