

# The Khione Bag

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The Khione Bag is a novel avalanche protection device that increases the accessibility and efficacy of life-saving personal safety equipment for backcountry recreationists. Building off of traditional avalanche airbags (buoyancy devices that prevent wearers from getting buried in an avalanche), it incorporates a dual-walled inflation structure for faster deployment, passive air delivery to a buried user for a longer-lasting oxygen supply, and a protective, over-the-shoulder form factor. The airbag is also backpack-agnostic, meshing with a user’s existing gear instead of requiring the purchase of an expensive integrated setup.



## The Problem

Avalanche airbags are lifesaving—and expensive.



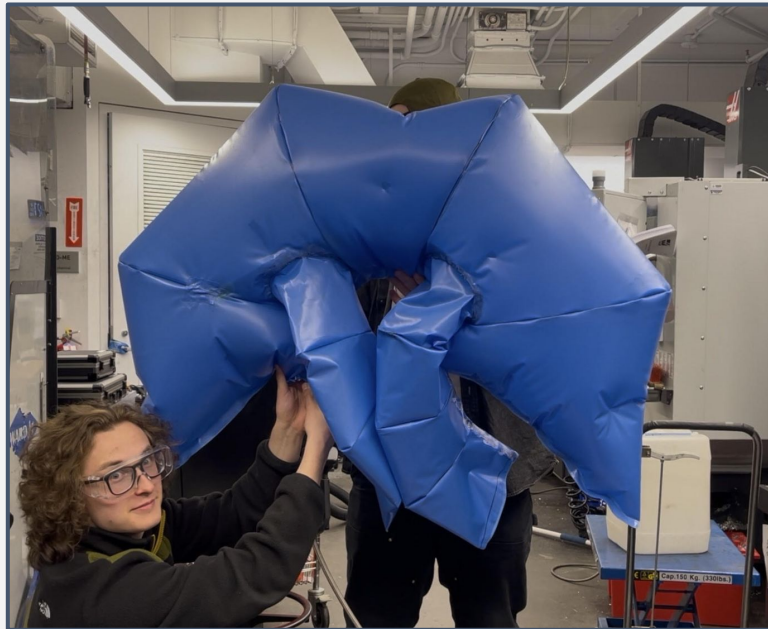
Average MSRP:  
~\$1,300



Mortality risk is **reduced by half** if someone caught in an avalanche is wearing an airbag. (Utah Avalanche Center)

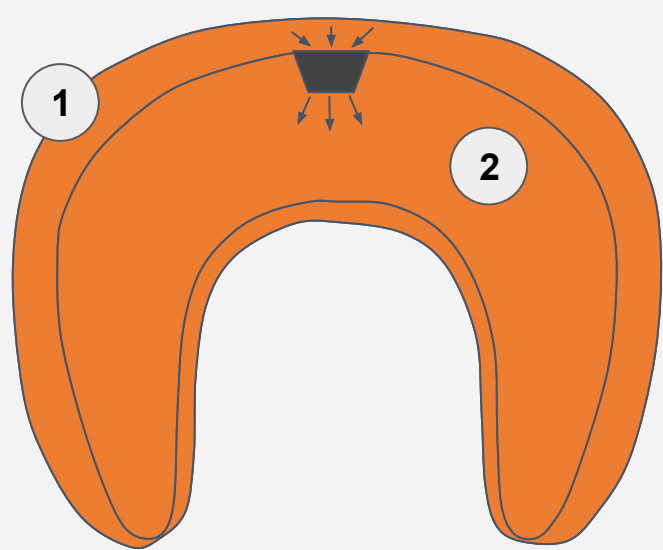
## A Competitive Edge

### Modularity + Over-the-Shoulder Protection



The Khione Bag can be attached to any backpack.  
  
Airbag sleeves provide extra protection around the user’s head.

### Dual-Walled Inflation



The Khione Bag’s dual-walled design achieves faster inflation in two steps:  
1) **Size and structure** rapidly provided by outer chamber  
2) **Incompressibility** provided by inner chamber

### Passive Air Delivery

Airbag Pocket

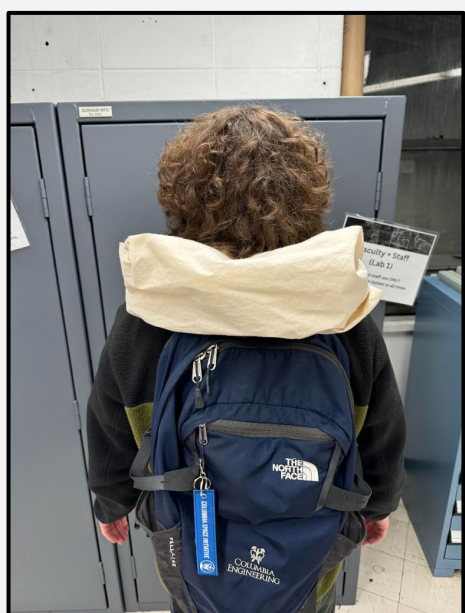


Once activated, the airbag will slowly and passively deflate. In the case of burial, it will deliver breathable air into the snowpack, giving rescuers more time to locate users (Fink)

## User Experience



1. Attach sleeves to backpack straps



2. Attach main bag to backpack handle



3. Connect air cylinder



4. Activate airbag by pulling cord



5. Airbag inflates

## Manufacturing



Cut pattern from TPU-coated ripstop



Iron fabric to create air-tight seams



Seal inner airbag to outer airbag

## Prototyping



Airbag I



Airbag II



Containment