

BLACK DIAMOND SOARS TO NEW HEIGHTS OF PRODUCT INNOVATION WITH JABIL'S SUPPLY CHAIN OPTIMIZATION AND WORLD-CLASS MANUFACTURING CAPABILITIES



Case Study

Black Diamond

Company: Black Diamond Equipment

Industry: Climbing and Skiing Equipment

Country: United States

Employees: 500+

Websites: blackdiamondequipment.com



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**Ryan Guess,
Ski Category Director,
Black Diamond**

CHALLENGES

- Black Diamond needed special supply chain expertise to simplify an overly complex, dispersed ecosystem of global suppliers
- To complete development of a revolutionary avalanche airbag, Black Diamond needed a go-to-market partner steeped in electronics manufacturing
- Quality processes and rigorous testing were paramount to meet stringent quality requirements

SOLUTION

- Jabil's intelligent digital supply chain capabilities helped Black Diamond simplify and optimize sourcing and procurement demands
- Jabil's depth of electronics manufacturing experience proved pivotal in helping to refine product design and development
- Jabil's proven manufacturing capabilities, backed by overarching quality systems, met all expectations for bringing Black Diamond's JetForce product to market

BENEFITS

- Black Diamond's JetForce is gaining significant market traction as the first avalanche airbag to use jet-fan inflation
- Jabil's supply chain management and electronics manufacturing prowess play an ongoing role in driving continuing product innovations
- Strong collaboration with Jabil enables Black Diamond to focus on its core competencies without having to worry about what's needed to scale manufacturing

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**Andrew Merriman,
Director of Sourcing,
Black Diamond**

When it comes to rock climbing, backcountry skiing and mountain sports, Black Diamond continually sets the standard for product quality and innovation. The company's iconic brands are synonymous with performance, durability and safety in the active outdoor and ski industries. Headquartered in Salt Lake City, Utah, at the base of the Wasatch Mountains, Black Diamond's diverse product line is created and tested on some of the best alpine peaks, slopes, crags and trails in the world.

Company employees across three continents, many of whom are rock climbers and skiers, are closely connected with the company's brands. “Our mission is to be one with the sports we serve,” explains Ryan Guess, ski category director for Black Diamond. “It's very

important to be completely engulfed in what we do as a business, so everyone can fully understand what our customers need and expect from our products.”

Black Diamond's extensive product line ranges from carabiners, trekking poles and ice screws to highly sophisticated pieces of climbing and snow safety equipment, including state-of-the-art avalanche airbags and beacons. The sheer diversity of its product catalog appeals to a wide swath of customers, from weekend warriors to elite athletes and mountain safety patrols. “Our customers are really what sets Black Diamonds apart,” Guess adds. “They want to reach new heights of performance in their sport, which propels us to continually push the envelope in terms of product excellence.”

Inspired to Build a Better Avalanche Airbag

Having a sport-obsessed R&D team has served Black Diamond extremely well over the years, earning the company countless design and performance awards for standard-setting products. “I came here as a young engineer, climber and skier,” recalls Andrew Merriman, director of sourcing for Black Diamond. “Thirteen years later, I've helped design and manufacture world-class climbing, skiing and trekking products that build on our core competencies in forging, machining, heat treating and anodizing steel and aluminum.”

In addition to producing inspired performance gear, Black Diamond's reputation for developing safety products drove the company to devise a better avalanche airbag. “There were real limitations to current, canister-based airbags,” Merriman adds. “We wanted to fill a hole in the market by coming up with a better solution.”

Traditionally, avalanche airbag packs use refillable, compressed-air canisters, and once discharged, they empty completely and must be refilled. Aside from the challenges of a single-use solution, conventional airbags pose travel problems, since typically only empty canisters can be transported. “We wanted to develop a system that could be deployed multiple times and continue to provide lifesaving capabilities in an avalanche,” says Guess. “So, we examined the current systems closely to determine the best way to simplify and improve each step of the process.”

In doing so, the Black Diamond team determined that a rechargeable, jet-fan inflation system would allow for multiple uses and eliminate the cost and hassle of canisters and refills. “When we started to make what ultimately became the JetForce backpack, it also marked our first major design and development project that incorporated electronics,” Merriman notes. “We spent over a year and a half working on it and still couldn't bring the product to market.”

During the JetForce design phase, Black Diamond purchased PIEPS, an Austrian company known for Personal Protective Equipment (PPE), including avalanche transceivers. “With PIEPS, we acquired a lot of electronics horsepower,” says Merriman. “We were able to design some great electronics but still had no real supply chain behind it. This led to a mission to develop a global supply chain for our electronics-based safety products.”



Consolidating a Complex Supply Chain

To help bring its vision for JetForce to life, Black Diamond needed to streamline what had become an increasingly complicated supply chain. “We were using existing suppliers located all over the world, so the initial supply chain was a mess,” says Guess. “Finding a more efficient, effective system for sourcing, procurement and manufacturing was a top priority.”

First, Black Diamond had to reduce the number of suppliers in the process as managing dozens of companies across the U.S., Europe and Asia became exceedingly difficult. Second, the company

sought a capable partner to simplify product commercialization by consolidating manufacturing for all its electronics snow safety equipment.

Through its acquisition of PIEPS, for instance, Black Diamond manufactures more than 40,000 highly sophisticated safety beacons a year. By bringing supply chain and manufacturing under one roof, the company would be well positioned to increase operational efficiencies while sustaining the highest levels of product quality. “Quality is a major driver behind everything we do,” notes Merriman. “Our snow safety gear undergoes stringent quality testing and certification processes.”

Another decision factor was the desire to speed the introduction of new and next-generation products. “The ability to make improvements quickly is key to our market leadership,” Merriman continues. “The challenge was finding a highly capable partner that could move fast under very tight timelines without compromising quality.”

In surveying the landscape of potential manufacturing partners, Jabil stood out because of its diversity of services and proven track record in electronics manufacturing. “Jabil’s complete set of capabilities matched our requirements,” recalls Merriman. “They had the skills to help us bring JetForce to market as well as the experience to support our entire line of snow safety products.”

Partners in Supply Chain Optimization

Black Diamond quickly took advantage of Jabil’s vast knowledge of electronics and decades of experience managing more than 25,000 suppliers worldwide to transform its own supply chain ecosystem. The two organizations partnered to review, reduce and then transition Black Diamond’s most important suppliers to Jabil, where a global team of sourcing and procurement specialists identified improvement areas. Previously Black Diamond managed plastic parts coming from Slovenia, motors from Asia and assorted components from the U.S. and Europe. By moving supply chain management to Jabil, Black Diamond immediately took advantage of a cadre of optimization solutions, including deep sourcing and negotiation analytics, automated purchasing, streamlined compliant processes and end-to-end supply chain visibility. Moreover, Jabil’s intelligent digital supply chain solutions are designed to accelerate new product introductions while lowering cost and risk.

“Jabil simplified our supply chain unbelievably,” notes Guess. “Their focus on quality was another huge aspect of our collaboration.” To that end, Black Diamond’s quality team conducted a full evaluation of Jabil’s quality control systems to ensure alignment with the sports gear maker’s stringent requirements. Black Diamond’s quality assurance process starts with the initial product design and

extends through certification and final commercialization. "Working with Jabil, we've been able to establish quality levels for raw material inspection and testing all the way through to final product testing before it gets shipped," says Merriman.

In particular, final product functionality testing plays a major role in ensuring that Black Diamond's snow safety equipment meets rigorous quality standards. "Jabil's capabilities in building and maintaining test equipment play a significant part in our overall go-to-market strategy," notes Merriman. "Our team had complete trust and confidence in Jabil."

This overarching confidence proved instrumental in helping Black Diamond bring its game-changing JetForce backpack to market. Without having to worry about day-to-day supply chain challenges, the team focused fully on refining JetForce's custom, lifesaving electronics systems to ensure flawless functionality in extreme cold conditions.

Teams of quality assurance engineers tested working prototypes in nearly every scenario of possible conditions and circumstances. Additionally, wide-ranging field tests were completed over the course of two winters before ramping volume manufacturing.

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Innovating Black Diamond's Future

Response to the JetForce launch was overwhelmingly positive. Customers, ranging from professional ski safety patrols to adventurous skiers continue to share real-world stories of how JetForce saves lives in avalanche situations. Ongoing customer feedback is incorporated into product planning to inform future generations of JetForce products.

Additionally, Black Mountain is exploring how to incorporate electronics into other snow-safety and climbing products by partnering with Jabil to drive development of emerging product

innovations. "What I like best about working with Jabil is the confidence they bring to the table," notes Guess. "We don't have to worry about anything we're working on with them, which means we can focus our energy on developing game-changing products and safety solutions."

For Black Diamond's product development team, Jabil offers supply chain stability and electronics expertise to spur future product development. "Jabil will help increase Black Diamond's leadership in many ways," Guess adds. "It goes beyond supply chain optimization to perfecting the mechanics inside a beacon or protecting outer product cases by strengthening internal structures. Jabil has completely changed our outlook as their expertise and help has put Black Diamond in a position to build the best lifesaving products on the market."

Together, Jabil and Black Diamond are leaving an indelible mark on the active outdoor and ski industries. "Black Diamond has a constant stream of new products we want to bring to market," concludes Merriman. "We're always looking for the next big thing and with Jabil as a partner, there will be lots of product innovations in our future."

About Jabil

Jabil is a digital product solutions company providing comprehensive electronics design, production and product management services to global electronics and technology companies. Offering complete product supply chain management from facilities in 27 countries, Jabil provides comprehensive, custom solutions to customers in a broad range of industries. Nypro, a Jabil company, specializes in medical devices, with a global footprint of ISO 13485 and FDA registered facilities, manufacturing many of the most recognized medical brands for major healthcare and wellness companies. Jabil common stock is traded on the NYSE under the symbol, "JBL". Further information is available on Jabil's website: jabil.com.