

RECOVERY FORCE ADVANCES NEXT-GENERATION WEARABLE TECHNOLOGY WITH JABIL'S UNMATCHED END-TO-END MANUFACTURING CAPABILITIES

JABIL

Case Study



RECOVERY
— F O R C E —

Company: Recovery Force

Industry: Healthcare Wearables

Country: Fishers, Indiana, USA

Employees: 10

Website: recoveryforceusa.com

Status: Currently seeking global strategic partners

Contact: inquiries@recoveryforceusa.com

Old Standard of Care



Next Generation Standard of Care



RECOVERY
— F O R C E —



RF1400

- FDA Class II Clearance
- Indications: Chronic Lymphedema, Venous Insufficiency, DVT Prevention
- Silent, Tubeless, Pumphless, Mobile
- Mobility Tracking (steps)
- Compliance Monitoring

“Jabil's capabilities throughout the world, including manufacturing expertise in electronics, textiles and software created a natural fit for us. Jabil and Recovery Force have developed a medical device to reduce healthcare costs by improving patient outcomes and compliance, which has taken our products to the next level.”

Matt Wainscott,
Co-Founder and EVP
of Recovery Force

CHALLENGES

- Finding a manufacturing solutions partner to meet unique and disparate technology needs of combining electronics and textiles
- Seeking a manufacturer with proven FDA certification experience
- A cohesive approach to taking unique technology to the next level

SOLUTION

- Jabil possessed the rare combination of expertise in both textiles and electronics
- Jabil seamlessly blended its design and manufacturing expertise with Recovery Force's strengths
- Jabil's unmatched ISO and FDA certification expertise aligned with Recovery Force's quality and regulatory objectives

BENEFITS

- Jabil's end-to-end capabilities accelerated the path from prototype to production
- Strong collaboration between Jabil's and Recovery Force's design and engineering teams creates a seamless path to manufacturing
- Cultural alignment reinforced by expedited responses, teamwork and collective commitment to reaching milestones

“It was a perfect storm to take what we had learned about these materials and transfer that knowledge to Jabil so they could apply all their core competencies to help us commercialize and find a sales channel partner.”

**Matt Wyatt,
Co-Founder and CEO
of Recovery Force**

Recovery Force is an innovative medical device company providing healthcare professionals, patients, and athletes with a next-generation mobile compression solution for enhancing circulation. Based in Fishers, Ind., the company has developed a platform technology with the ability to embed shape-changing memory fibers into various types of garments and footwear to produce therapeutic compressions. Earlier this year, Recovery Force announced a collaboration agreement with [Mayo Clinic](#) on the development, assessment, and optimization of its medical devices. The clinical impact includes: the reduction of post-operative pain, swelling and wound healing time, treatment of chronic lymphedema, prevention of blood clots (DVT), and alleviating joint pain and sore muscles. The same technology used in healthcare is also available to sports enthusiasts and athletes, providing enhanced circulation during warm-up and recovery to achieve optimal performance.

Praised as “a marvel of engineering” by the National Institutes of Health (NIH), Recovery Force’s patented technology works without bladders, pumps, cords or electrical stimulation to increase patient compliance. The technology centers on embedding woven fibers of nickel titanium, also called Nitinol, into textiles. These woven fibers have the unique ability to change shape in real-time to deliver sequencing compressions that increase circulation to the body’s cardiovascular and lymphatic systems.

According to company co-founder and CEO Matt Wyatt, the real game-changer is how Recovery Force can deliver breakthrough capabilities in a comfortable, lightweight form factor that doesn’t restrict the wearer’s mobility. “The technology for the last 30 or 40 years tethered people to beds or wall-mounted devices,” he explains. “Our technology lets patients and consumers be mobile, giving them a much better experience and quality of life after surgery, sports performances or other activities.”

‘Three Ps’ Propel a Powerful Value Proposition

As a serial entrepreneur in the medical device industry, Wyatt traces the origin of Recovery Force to a guiding principle he calls the “three Ps”: Purpose, Passion and Prosperity. “There was a great need for our purposeful technology, which I was very passionate about,” he says. “The key was persevering through the challenges to commercialize the solution and create prosperity.”

For Matt Wainscott, co-founder and EVP of Recovery Force, another important driver for the business was finding the right manufacturing solutions provider to help fully realize the company’s product vision. “Early on, we all wore a lot of hats,” he recalls. “We needed help to accelerate the technology yet struggled to find the right mix of capabilities. The first company had a textile background; the second had an electronics background, but what we really needed was a total turnkey solution.”



The tricky part is that embedding electronics into textiles requires unique competencies and capabilities to ensure optimum comfort, durability and convenience. “There are lots of manufacturing companies that do project management, electrical engineering, mechanical engineering and software engineering,” adds Jeff Schwegman, VP of Engineering for Recovery Force. “With our product, we have a textile feature—that’s not normal.” To that end, Recovery Force sought a manufacturing partner that understood the challenges of textile-integrated electronics and could adhere to strict quality guidelines and ISO 13485:2016 certification.

A One-Stop Shop for Navigating a Perfect Storm of Possibilities

After some deliberation, a global brand interested in Recovery Force's technology offered an introduction to Jabil, one of the most technologically advanced manufacturing solutions providers in the world. Executives from the two companies soon met and a visit to Jabil's Blue Sky Innovation Center in San Jose, Calif., sealed the deal.

"It became apparent that Jabil was the right partner for us," Wainscott says. "Jabil and Nypro checked the box on every ISO 13485 question. Most important, Jabil's immense capabilities throughout the world, manufacturing expertise in both textiles and electronics, along with an understanding of how those two weave together, created a natural fit. Jabil can take our products to the next level."

With Jabil, Recovery Force discovered a dedicated partner capable of assembling the disparate pieces of a complex technology and textile puzzle. "It was a perfect storm to take what we had learned about these materials and transfer that knowledge to Jabil so they could apply all their core competencies to help us commercialize and find a sales channel partner," notes Wyatt.

Recovery Force soon found Jabil to be a unique one-stop shop with proven ability to drive many aspects of product design, development and commercialization. For instance, Jabil's Radius Innovation and Development consultancy was invaluable in setting the tone for further product ideation and development. In particular, Radius



advanced the product design while maintaining the strenuous process of meeting FDA requirements.

The presence and impact of Jabil's Nypro Healthcare operation proved instrumental, thanks to its long history of providing healthcare customers with the widest array of design and manufacturing capabilities possible. The overall expertise gained from Jabil's acquisition of Clothing+, a proven leader in e-textiles, also offered unmatched advantages.

"We'd done a lot of prototyping and testing even before we engaged with Jabil and Nypro," Wainscott says. "When we got involved with Nypro, we were able to send them prototypes and exchange ideas back and forth which accelerated the development process." In return, Jabil's depth of knowledge and decades of industry experience led the way to creating a smoother path to manufacturing.

"Having all these capabilities around the world yet under one roof has enabled us to move efficiently toward partnering with a brand to bring our technology to market."

**Jeff Schwegman,
VP of Engineering
for Recovery Force**

Expediting the Path from Prototype to Production

With the help of Nypro and Radius, Recovery Force quickly picked up the pace in refining product prototypes. "We needed to ensure an optimal user experience, which placed a priority on human factors design since the product will be used by a lot of different types of people," says Schwegman. "It had to be intuitive, easy to use and comfortable. Radius did a great job of researching the markets we intended to capture and then looked beyond them to offer value-added insights and recommendations."

Radius took design and user experience cues from related markets, including automotive, pharma, medical and sports. "Radius focused on the user interface, the look and feel, and of course, product quality," Schwegman adds. "It impressed me how they looked at so many places and markets to make sure the product design was user friendly and aesthetically pleasing."

The result of this initial effort was 15 different designs for consideration; elements from four or five completely different design ideas ultimately were melded into the final product prototype. Jabil and Nypro brought a lot of resources and ingenuity to the table to help Recovery Force deal with FDA clearance. "Nypro took what we've learned with integrating our technology into some of our prototypes," Wyatt says. "They made the product more elegant, more functional, more user-friendly and of course, ultimately scalable, which is a critical piece to this whole technology play."

Jabil's trailblazing as a leader in advanced digital manufacturing ensured rapid prototyping was provided for the textile portion of Recovery Force's efforts while Green Point, a Jabil company that specializes in designing and manufacturing plastic and metal parts for consumer and mobile products, provided expertise on the mechanics of putting the active compression into garments.

The collective Jabil team assisted Recovery Force with scaling for volume production by handling electronics integration, battery power sourcing as well as embedding electronics into fabric. In doing so, they ensured the product was rigid enough to include the pulsating wires without compromising flexibility or comfort. Recovery Force's first product, a compression back device that will enhance blood circulation, will literally pave the way for future products.

"Jabil shared our goal of getting a product to market quickly to create revenue," says Schwegman. "As part of our close-knit team united around a common goal, they've helped us reach aggressive milestones and become more efficient and responsive to keeping things moving. Having all these capabilities around the world yet under one roof has enabled us to move efficiently toward partnering with a brand to bring our technology to market."

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 29 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.

Gearing Up for Volume Manufacturing

Jabil and Nypro are in lockstep with Recovery Force as the company determines its next set of milestones and moves closer to volume manufacturing. "Jabil and Nypro are ready to help us scale quickly," Schwegman says. "We'll start with low volume yet be fully prepared to move fast and jump into automated assembly as needs dictate. We feel confident our phased approach is achievable."

From start to finish, Jabil, Nypro and Radius have helped Recovery Force unlock the potential of its therapeutic performance apparel. "From prototype to production, Jabil's end-to-end digital manufacturing solutions are enabling Recovery Force to move forward quickly and decisively," Wainscott says. "We're very excited and feel good about the relationship. Jabil is very selective in the types of customers they work with, so we feel fortunate to be part of that."



For Recovery Force, the future looks bright with next steps including selection of sales channel partners for each of its business segments: (1) RF's Class II medical device portfolio; including a DVT prevention device and (2) RF's consumer suite of wearable products. Recovery Force will continue working with Jabil on new technology developments and achieving its next FDA clearance for making devices to treat upper extremities, particularly to fight chronic lymphedema and venous insufficiency. In addition, Recovery Force sees great opportunities in the footwear market, specifically to assist diabetics or those suffering from foot pain, such as plantar fasciitis. There are an additional 15 devices in the product development pipeline that focus on enhancing circulation for all parts of the body.

"No matter how good your technologies are or how competent and how great your processes are, if you don't have the right people, it really doesn't matter," Wyatt concludes. "We see that in Jabil. The responsiveness, the commitment to follow through. The intentionality of both companies to get this product designed, developed and commercialized and into the marketplace—we're completely aligned. I can't think of a better partner."