Highlighting Challenges. Producing Solutions.
A series of ebooks that bring you innovative, practical knowledge on converting

Design for Manufacturing:
Medical Devices Using VELCRO® Brand Fasteners

VELCRO® is a registered trademark of Velcro Industries B.V.
Providing expertise in products designed for diagnostics, orthopedics, and surgical, respiratory, vascular and ostomy care

When designing new products for the medical industry, engineers must consider a range of factors in order to meet end goals. Everything from compliance and regulatory issues to patient comfort, safety, sterility and ease of application need to be taken into account.

Design for Assembly:

Keeping the assembly line in mind is also critical because your manufacturing process will have bearing on decisions you make regarding design, materials and converting.

The design phase of your project is when it can be most helpful to call in a converting expert who is familiar with VELCRO® Brand portfolio of products. Converters can make your job easier by offering samples of various types of products, access to research and documentation, or by providing you with converting options that aid assembly.

This Guide:

Read this guide to uncover your own strategic questions, and arrive at the answers that will help you design a solution that fit your specific requirements.

Did You Know?

The medical device market is valued by some industry experts at $75 billion, and it’s growing 8 to 10 percent annually. It’s driven by an aging population of people who want to continue to lead active lives. Some segments of the market are growing at 15 to 20 percent annually.
The Good News:

Velcro® Brand technology is used in a wide range of medical applications and in patient solutions from the orthopedic to surgical – disposable products such as closures for patient gowns to durable devices like apnea headgear. Their portfolio of advanced fastening materials can be converted into components and fabricated sub-assemblies and finished goods based on your requirements and specifications.

Let’s Take a Step Back:

Before you can focus on choosing a Velcro® Brand material for your product you need to determine the range of environments and exposures where your product will be used, and how it will be ‘assembled.’ Important considerations in this part of the process include environment and usage cycles as they will dictate which materials can be selected, and those that can be converted in a way that supports the specific application and assembly process.

Start During R & D:

The following are good questions to ask as you get started, but we also recommend that you contact a converting expert. They will likely have additional questions on design that are helpful to take into account.
• **In what setting(s) will your product be used?** Will it need to hold up to repeated sterilization, radiation treatments or other extreme procedures? Velcro offers certain materials that meet the requirements of various types of cleaning, disinfecting and sterilization techniques that use heat, radiation and chemical immersion.

• **What problem are you trying to solve with your product?** Do you need to brace an area of a patient’s body, drain fluids in a sterile setting, fasten a medical device to a patient or secure a privacy drape? The material you choose must fit the exact use.

• **Will the product come in contact with skin?** Almost all Velcro® Brand materials are made without latex and are hypoallergenic. Ask your converter for documentation.

• **What compliance or regulatory issues are you dealing with?** Ask for material safety data sheets or laboratory research - data could guide your thinking.

• **Will your product be used repeatedly, on multiple patients?** Avoid cross-contamination issues by designing a product that is single-use and disposable. This should be offering the multi-use / cleanable material, or rephrase the question to lead to the current payoff of disposable.

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**Tap Into a “Custom” Team**

In the event the base solution does not exist, a Converter with Engineering services can help guide your project through Velcro® Industries custom design and fabrication services.

Orthopedic braces, protective headgear and heavy-duty, reusable straps – you name the medical industry product and chances are you will find a Velcro® Brand material in the mix.
Applications Drive the Choices within Material Families:

VELCRO® Products for Medical Monitoring Equipment
When speed and accuracy count most, VELCRO® Brand hook and loop technology keeps vital medical monitoring sensors in place.

Medical Monitoring Hook and Loop Fastener Uses
- Blood pressure monitoring
- Pulse oxygen monitoring
- Fetal monitoring

VELCRO® Orthopedic Braces, Belts, and Straps
Medical brace designers and manufacturers use VELCRO® brand products add comfort and security to orthopedic supports and bracing devices. Stretch loops, back-to-back loop straps, and light, breathable EVAPTEX™ fabrics are ideal for strapping applications in orthopedics and sport bracing as well as maternity support.

Orthopedic Hook and Loop Fastener Uses
- Braces: knee, shoulder, elbow, wrist, neck, back, foot, ankle, walker boots
- Hot & cold therapy
- Corsets and medical binders
- Patient positioning
- Wheelchair covers and belts
- Cervical collars
- Clavicle support
- Maternity support belts
- Continuous passive motion therapy pads (CPM)

Surgical Patient Positioning and Drape Closures
Disposable fasteners and straps from Velcro Industries provide a safe and cost-effective solution for the surgical environment. Hospitals around the world rely on our hook and loop products for critical patient positioning in emergencies.

Hook and Loop Surgical Uses
- Disposable gowns
- Surgical tubing
- Surgical drapes
- Masks
- Operating tables
- Patient positioning
Respiratory Device Fasteners
VELCRO® Brand straps add elasticity, comfort, and ease of use to devices designed to aid breathing and respiratory therapy. The strength and durability of VELCRO® Brand hook and loop technology ensures that products can withstand repeated use and adjustment, without sacrificing performance.

VELCRO® Respiratory Device Fastener Uses
- Tracheotomy straps
- Continuous positive airway pressure headgear (CPAP)
- Chin-straps

Hook and Loop for Vascular Devices
VELCRO® Brand hook and loop systems are engineered to meet many of the performance requirements of vascular devices used in hospital and outpatient procedures. Adjustability, comfort, and security are only a few of the benefits of our closure products.

VELCRO® Product Uses in Vascular Devices:
- Deep vein thrombosis
- Compression devices

VELCRO® Brand Fasteners for Ostomy Daily Living Aid Applications
VELCRO® Brand hook and loop products are versatile as well as comfortable. Our hook-to-hook PRESS-LOK™ fasteners offer a unique solution to the positive lock features often required for many products in the ostomy market. Our expanded product line offers a solution for every fastening need—from disposable to high-use products. We have the products to meet your design requirements.

Ostomy and Daily Living Aid Uses for VELCRO® Brand Fasteners
- Ostomy pouches
- Urinary bags
- Bandages
- Catheter securement
- Seating
- Aids for daily living (ADL)
As you think about what you need for your application, remember these major considerations in our three-step process:

**Design It:**
- Environment
- Usage
- Non-allergenic
- Compliance
- Assembly

**Source It:**
- Lot Tracking
- Inventory management
- Component materials
- How thin or thick
- Permanent, re-positionable

**Convert It:**
- Production volume
- Die cutting
- Laser cutting
- Perforations
- Slitting

Connect with a converting team that offers a broad range of technologies, solutions and laboratory capabilities to help with your design and manufacturing challenges. They will be helpful as you move from concept to production by developing a proof of concept and identifying design and manufacturing options.
Gleicher Manufacturing Corp. is a family-owned business with 64 years of experience in converting. We’re unique in that we serve as a bridge between customers’ development, manufacturing and purchasing departments.

We are proud of the fact that we’re a “VELCRO® Platinum Distributor” one of only a handful in the country. We earned this kind of status by meeting high quality standards and through our ability to handle diverse converting methods. We can make sure you feel the swell of pride as well.

Our goal is to make sure you solve your assembly problems while you’re still in the research and development phase, not when the assembly line has started to roll. We make sure that the production line will not come to a halt, costing you time and money, by helping you think through how best to convert our materials to meet your needs.

Located in Scotch Plains, New Jersey, we were founded in 1949 as a supplier to the U.S. Navy. Since then, we’ve established ourselves not only as a dependable, knowledgeable provider of product solutions but also as an innovator for whom “good enough” is never enough. We want your product to exceed expectations. After all, we are putting our name behind it, too.

We’re Gleicher. Your partner in innovation.

Chick Gleicher,
President
Additional Resources:

VELCRO® Medical Industry Solutions (website)

VELCRO® Medical Solutions Brochure (pdf)

LET GLEICHER’S TEAM HELP

Together we’ll help you deliver the right product in the right configuration, and guide you in cutting time and minimizing waste.

Send You Samples: Would you like to see an example of a die-cut fastener? A perforated strip?

Request a sample or custom prototype. (web form)

Review your product assembly challenge. We’re your partner in innovation.

Let’s Talk About Your Design. (web form)

Call us: (877) 629-0738. Ask for Engineering

Email Us: Engineering@Gleicher.com

Visit Us: Meet with us in Scotch Plans, NJ

www.gleicher.com