



ADHESIVES SOLUTION HELPS REVOLUTIONIZE DIABETES INFUSION THERAPY.

BACKGROUND

For the millions of diabetics who are dependent on insulin injections, ease of use in an injection device has a real impact on quality of life. To that end, a global medical device company approached PGC to help with a new infusion set design that would not only make users' lives easier, but redefine the industry standard.

CHALLENGE

The customer envisioned a revolutionary all-in-one infusion set featuring an automatic needle retraction system to reduce unwanted needle sticks, a breathable, skin-like adhesive dressing that keeps water out, and a hidden insertion needle that improves usability for children and patients with needle phobia.

Our part at PGC was to find solutions for:

- > Laminating on multiple layers of alternating adhesives and fabrics.
- > Cutting at multiple depths.

The adhesive patch needed to adhere to the applicator, stick to a user's skin, then come out of the applicator seamlessly.

Insulin Infusion Set Design



INDUSTRY:
Medical

APPLICATION:
Insulin pump

PRODUCT:
Adhesives

SOLUTION

In a process so exacting it required a custom-made laminator, PGC laminated four layers of adhesive onto an unsupported, unstable film—the artificial skin. PGC’s engineers procured a medically-approved nonwoven fabric that allowed the adhesive to stay in position against the skin while decoupling from the cannula.

Once the fabric and adhesives were laminated to the artificial skin, the patch needed to be cut at different depths from the top and the bottom without going all the way through, so that the only part that would stick to the user was the artificial skin layer.

To ensure that the patch stuck and released properly, it was critical to eliminate the tiniest degree of movement. PGC’s team solved that with an application of stress concentrators around the edges. When the user pulls the applicator away, the stress concentrators allow the artificial skin to release from it.

RESULT

Due to its unique design features, which reduce complexity, maximize comfort and help ensure safety for people with diabetes, the infusion set has established a new standard on the market, and won the Medical Design Excellence Award.

If you would like more technical information on this case story, or have questions you’d like to discuss with one of our engineers, contact us at: sales@pgcsolutions.com or call **(952) 942-6711**



HEADQUARTERS

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