



Precision on the **Move**

PITCH PERFECT CONVEYING FOR MEDICAL DEVICE MANUFACTURING

PURESTEEL® METAL BELTS PROVIDE A CUSTOM, CLEANROOM-COMPLIANT SOLUTION

Two of the most important factors in a medical manufacturing space are accuracy and cleanroom capability. When a U.S. based medical equipment manufacturer required a metal belt with a pitch profile that didn't currently exist, they turned to Belt Technologies. We were able to solve the issue and begin a successful partnership that has lasted more than two decades.

THE CUSTOMER

Arthur G. Russell Company Inc., based in Bristol, Connecticut, is a preferred turnkey automation system manufacturer with a team that delivers effective results. As the world's premier provider of custom assembly systems for high-volume disposable medical device production—from syringes to pen needles and pipettes—AGR prides themselves on creating the machines that make it all.



THE SEARCH

With such a wide array of offerings, the customer is unique in the sense that they build custom automation machinery, much of which requires belts with very specific pitches (the space between individual perforations, timing pins or other such features). In 1998, the client began their search for a company that could provide a conveying solution for a new medical device assembly machine. The machine needed to move small needles for automated assembly of a medical device, so a very precisely designed custom belt was necessary. The required solution needed to excel in a cleanroom environment, while offering repeatability and the personalization of a custom pitch.

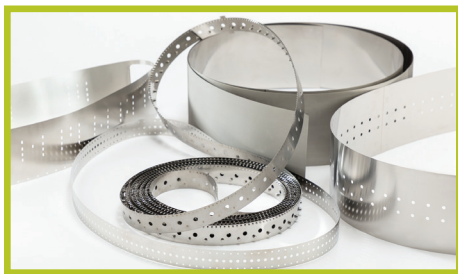
During the search for a suitable manufacturer, the customer initially reached out to a different company, but were disappointed to learn they could only offer a belt with a standard pitch. Undeterred, AGR continued their search and struck the right chord with Belt Technologies.

THE DECISION

Belt Technologies provides several advantages over other manufacturers, including a focus on accuracy, cleanroom compatibility and customization, while offering non-stretch products that do not require lubrication. As customization was the most important aspect for Arthur G. Russell, we were able to work alongside them to create a personalized solution which met their exact specifications. And it's not just about custom perforation pitches; our customization options also include a broad array of metal alloys, belt width and thickness combinations, perforation patterns, coatings and attachments. Our engineering team was heavily involved in the conversations with AGR's customer, ensuring they reached a solution that would last.

Repeatable accuracy was also critical to AGR's design, which meant we had to supply a product capable of holding tight tolerance on the pitch. This was possible due to the fact that metal belts do not exhibit pulsation—enabling precise transmission of the control system's motion profile. To ensure the most accurate and reliable motion possible, PureSteel® metal belts are manufactured to dimensions with very tight tolerances. This detail-oriented focus allows us to fabricate metal belts with a pitch accuracy of ± 0.0005 ", which is valuable in designing, indexing, positioning or processing bulk medical devices.

The final stipulation was cleanroom compatibility. Unlike polyurethane, nylon, rubber or fabric belts, metal belts can withstand vacuum conditions and caustic environments. Additionally, metal belts do not require lubrication and do not generate particulates, making them cleanroom compatible and ideal for the customer's exact specifications.



THE RESULT

The customer reports that the belts last an exceptionally long time. In fact, this solution, which was created for the machine in 1998, is still in use today, and AGR's customers are pleased with the results.

Following this original order, Belt has held a longstanding, trusted partnership with Arthur G. Russell for more than two decades. They remain the client's only supplier of precision, thin steel belts, creating a variety of custom belts for new machines over the years.



THE COMPANY:

A turnkey automation system manufacturer with a team that delivers effective results. As the world's premier provider of custom assembly systems for high-volume disposable medical device production—from syringes to pen needles to pipettes—AGR prides themselves on creating the machines that make it all.



THE PROBLEM:

The customer produces custom medical device manufacturing machinery, much of which requires cleanroom compatible conveyor belts with very specific pitches that they didn't possess at the time.



THE SOLUTION:

Belt's engineers worked alongside the customer to custom create a conveyor with cleanroom compatibility and a specific pitch profile for the machine in question, capable of holding an extremely tight tolerance on the pitch.



THE RESULTS:

The solution created for the machine in 1998 is still in use today. Arthur G. Russel reports that their customers are pleased with the results and, more than two decades later, Belt continues to enjoy a successful partnership with them.



YOU CAN CALL THEM [BELT TECHNOLOGIES] AND SPEAK TO AN ACTUAL ENGINEER AND GET DESIGN SUPPORT AND ADVICE ON THEIR SYSTEMS. THEY ARE DEPENDABLE, RELIABLE AND WE LIKE TO WORK WITH THEM ON CUSTOM PROJECTS. THEY ARE ALWAYS WILLING TO HELP US OUT.



— ARTHUR G. RUSSELL COMPANY INC.