



Medical Devices in Scotland has pulled together a series of case studies to highlight the extent of the skills and expertise available in the medical technology sector in Scotland, along with examples of collaboration throughout the industry which has helped companies compete both at home and abroad.



Hard Graft Conquered by Collaboration

Innovation is no stranger to Paisley based cardiovascular graft specialist, Vascutek, which has developed over the past 23 years as a diversification from its origin at J&P Coats. From producers of yarns to one of the world's medical grafting specialists, Vascutek Terumo is a prime example of a company with the will and drive to conquer new markets.

With the demise of the textile industry and the increasing demands of the medical profession, the company put its weaving and knitting skills to life saving use, and is now No.2 in the world for supplying vascular devices. Its core product is gelatine sealed vascular grafts, and as the company produces more than 1000 grafts a week, it is not hard to imagine that the work of this factory in Inchinnan touches the lives of thousands worldwide, providing that crucial replacement which allows patients to fully recover from the surgical correction of diseased or damaged arteries.

Pushing the boundaries

With Vascutek's success has come increased demand for modifications, improvements to address new surgical procedures and less invasive methods of inserting grafts into the body. Tim Ashton, Vice President of Research and Development at Vascutek noted: "We have always been a company which likes to keep a step ahead of the game. If we see an opportunity to improve, modify or design a product which will meet the ever challenging world of medicine, we will do everything in our power to make it happen."

In the summer of 2004, the company struck such a feat. It required to produce a graft with a specific coating for an extremely complex surgical procedure. Tim and his team had the ideas but it was not until they started to speak to The Medical Device Company Ltd, that the shape of a new machine started to form. Discussions with this highly specialised team at The Medical Device Company - who effectively turn ideas into engineering plans - resulted in a brand new product design.

Virtual becomes reality

The objective was to produce a machine which could apply the required coating to very fine grafts with uniformity and precision. The brief fixed, the team at The Medical Device Company got to work on turning the ideas into an engineering design. Several months later, the 3D virtual machine was in full working order on screen - and not one piece of metal had been cut.

Although the brief was tight on the outcome, there were many variables on production that The Medical Device Company had to consider. Not only was the required machine the first of its kind, but it would be producing grafts worth thousands of pounds. A margin of error was not an option. In addition, the entire machine had to operate in a standard flow cabinet under clean room conditions.

Two thirds of the jigsaw in place, The Medical Device Company then enlisted precision engineers, Almond Engineering, to take the design to reality. Almond Engineering, experienced in

working with the intricacies of syringe design, not only had the expertise to meet the brief, but were within a 50 mile radius of the client and advisors.

The resultant machine has now been fully developed to rock and roll for many years, with a specific calibration to ensure that each graft is coated precisely with the required coating.

Jerry Donnan noted, "Unique projects such as this have a steep learning curve for all concerned, but the fact that the whole operation was done within a compact area was a great advantage for Vascutek."

"We harbour a superb range of skills in Scotland and this particular exercise has demonstrated to us the flexibility required for such projects and the level of skills that we do have right on the doorstep."

Vascutek now has a unique machine at its Inchinnan plant due to start production of a very specialised graft, set to be a leader in its field throughout the world.