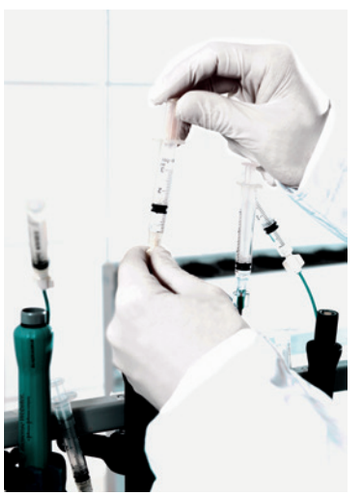
Extending the circular economy to high quality medical devices

Regardless of their sophistication and complexity, many high-tech medical instruments are designated for single use because the original manufacturer did not develop a procedure allowing for the safe reuse of the device. However, the 'easy' option of simply throwing away high-value equipment after it has been used raises huge environmental and sustainability questions. As the leading European remanufacturer of single-use medical devices, Vanguard AG provides the answer to these questions and much more besides.

Visual controls are part of a rigorous quality control process



Microbiological testing ensures elimination of protein residues

Diagnostic catheter handles are loaded into a special protection chamber

In the more than 20 years since it was established, Vanguard has diverted 275 t of medical waste and remanufactured more than 2.5 million medical devices. Unsurprisingly, given these impressive figures, it is the leading medical remanufacturing specialist in Europe, with 200 employees and remanufacturing sites in Berlin, Friedeburg and Aschersleben. "We are the medical equipment equivalent of a generic pharmaceutical manufacturer," explains CEO Marcus Bracklo. "Our remanufactured products offer the same functionality, safety and quality as the original but twice the sustainability. Our devices have a carbon footprint that is half that of a new product and are also cheaper to produce. While cost can never be the only factor when it comes to healthcare, it is nevertheless a big consideration for hospitals operating under ever-tightening financial constraints."

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But it was the environmental impact of single use medical equipment that first motivated the establishment of Vanguard in 1998. The company began as an ambitious technology start-up focusing in an initial phase on research into manufacturing and process development. In a second phase based on the results of this research, the company began product development. Three years ago it started phase three with fully scaled up industrial production of remanufactured devices. "Medical device remanufacturing is a highly regulated but relatively new area," describes Mr. Bracklo. "The regulatory framework governing the reprocessing of single-use medical devices here in Germany was put in place 15 years ago but, from May next year, this sector will fall under the new EU-wide regulation MDR 2017/745 EU. This means that we will be able to expand our international activities."

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The UK, Belgium and the Netherlands have already adopted the regulatory framework in their own statute books which is why Vanguard is already established in these markets. "We set up a subsidiary in London last year and just started operating in the Dutch and Belgian markets this summer," says Mr. Bracklo. "As each EU member country opts in to the new regulation, we hope to expand our operations EU-wide starting with Scandinavia next year."

Although the Covid-19 lockdown temporarily slowed growth by stopping many planned surgical procedures from going ahead, sales have recovered strongly. "Our core markets are cardiology and surgery but we are keen to expand our product portfolio at the same time as we expand our geographic presence," notes Mr. Bracklo. "We already have more than 1,500 customers across Europe, including leading university hospitals, general hospitals, medical practices and manufacturers, and a proven and tested remanufacturing process. This gives us a clear head-start in a sector that is still in its infancy."

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Out of 34 teaching hospitals in Germany, Vanguard counts 28 of them among its customers. "We are also strongly represented among major private clinics and public hospitals," says Mr. Bracklo. "Our key advantage over competitors is our broad product portfolio and long experience. We also boast an innovation advantage over others looking to enter this highly specialized market now that its geographic potential is set to grow markedly."

Vanguard's vision for the future is to reduce waste from single-use medical devices to an absolute minimum by making remanufacturing the default position rather than the exception. "We have developed exceptionally effective cleaning and sterilisation procedures which allow us to guarantee the sterility and functionality of our remanufactured devices in full accordance with the specifications of the original products and in compliance with the requirements of MDR 2017/745 EU," insists Mr. Bracklo. "The potential in terms of lowering the environmental burden from single-use devices is huge. This is a key motivational aspect for our highly qualified employees. We can see only advantages from our system and are keen to communicate these to customers." While the coronavirus crisis has necessarily limited contacts via conferences and symposia, Vanguard will doubtless prove just as innovative in overcoming this challenge as it has with its groundbreaking solution to the problem of dealing with single-use devices.

The component parts of an ultrasonic surgical shear are disassembled ready for cleaning

A specially designed cleaning system is part of a rigorous process for remanufacturing single-use medical devices developed by Vanguard