The offshore alternative

Don't want to take the outsourcing or offshoring route for your product? Micro manufacturing technologies have proven themselves to be a viable option for device production.

Company Profile

Mikrotech is a manufacturer of custom-designed plastic micro-machined, micromoulded, micro-inserted moulded components and subassemblies.

Mikrotech specialises in producing cost-effective solutions for replacing stainless steel, ceramic, glass or plastic machined components with high-precision tolerances. Capabilities include design and engineering services, a pellet-to-package closed-loop moulding system and a class 8 cleanroom.

Further Information

Website: www.mikrotech.com

Micro manufacturing can reduce the need for outsourcing.

It's not uncommon today to open any medical trade magazine and see an article about the advantages of outsourcing or moving entire products offshore. Minimally invasive surgery (MIS) manufacturers are now moving away from manufacturing and are focusing on designing and marketing products. However, many of the benefits of moving manufacturing are short term and erode over time. Micro manufacturing technologies can be an alternative that provides similar short-term benefits while also maintaining longer term strategic advantages.

Mikrotech is a leading micro manufacturer of custom-designed components and subassemblies for medical devices used in minimally invasive surgery. The company's processes overcome the limitations of established technologies, with smaller components, complex features, a reduction in the number of components, archaic processes eliminated and manufacturing costs reduced. The key is best-in-class micromoulding equipment, with twice the precision and repeatability of conventional injection moulding equipment. It enables the company to achieve tolerance targets on complex medical devices that conventional moulders cannot maintain and streamline the manufacturing process to create a more robust and reliable design for manufacturing.

A 'disruptive' technology

'Micromoulding is a "disruptive" technology,' says John Whynott, technical product manager at Mikrotech. 'We believe it has the potential to change the landscape of minimally invasive surgery. It's changing the way designers and buyers look at developing and sourcing components and subassemblies. It allows increased flexibility to design smaller more complex components and subassemblies.'

The majority of minimally invasive surgical devices are complex, high-precision multi-part assemblies, manufactured using highly skilled manual labour. Many of these devices are assembled under a microscope and use qualitative manufacturing operations such as bonding and welding. Companies spend years developing and perfecting products that allow them to ensure compliance, quality, reduced risk, lower costs and profitability. This acquired knowledge becomes a core competency and a sustainable competitive advantage.

However, efforts to cut the cost of these labour-intensive manufacturing processes often result in the choice of outsource or offshore production. Doing so requires transfer of core manufacturing competency which can lead to lower barriers to entry for future competitors.

Low-cost and efficient

There are ways to reduce costs and still maintain a competitive advantage in manufacturing. One alternative is to find or develop new manufacturing technologies that reduce or eliminate labour-intensive manufacturing operations. Advances in micromoulding technology and polymer science now allow a range of cost-effective alternatives for components and subassemblies that are miniature, complex and require high-precision tolerances. Micromoulding can permit these machined components to be replaced, dissimilar components to be combined or insert moulded and bonding and welding to be eliminated. These changes can reduce the number of components, overall size, assembly complexity and time required to assemble the device under a microscope.

Companies need to explore new technologies to help reduce the complexity of MIS devices. Micromoulding technology can be an excellent lower-cost alternative to designing and manufacturing components and subassemblies for MIS devices. It allows MIS devices to be manufactured efficiently without compromising knowledge and competitive advantage. ●