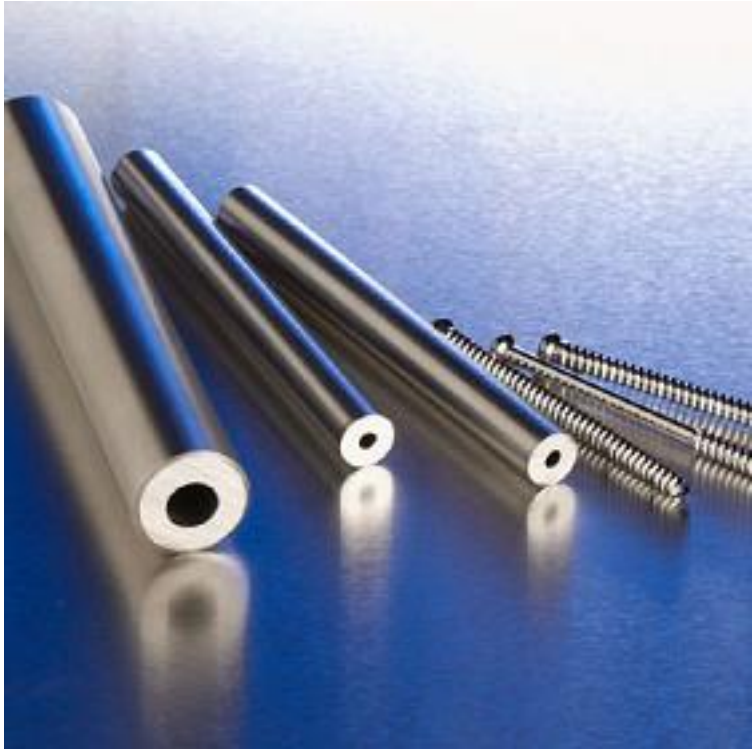
Carpenter’s Custom 465 Stainless Opens Doors to New Business for Veridiam’s Medical OEMs

Carpenter Technology

A contract manufacturer servicing original equipment manufacturers in the endoscopy/arthroscopy, orthopedic, dental/orthodontic and vascular markets has been making significant inroads into selling machined components for medical blade applications over the last several years. This is partly because of its customers’ increased use of Custom 465 stainless, produced by Carpenter Technology Corp.



Carpenter Technology Corporation Custom 465 is a

Custom 465 stainless bar stock. Photo: Carpenter

Is an unmodified Creative Commons photograph by Matt Wilson

Photo:

Custom 465 stainless is a premium quality, high strength, martensitic, age-hardenable stainless alloy designed for improved notch tensile strength, fracture toughness and fabricability. Anthony Guitterez, Carpenter [1]’s medical marketing manager, says that the alloy has been used increasingly for medical blades, especially in endoscopy/arthroscopy and orthopedic applications, because of its unique combination of strength, toughness and fatigue.

Guitterez says that Carpenter continually sees increased applications for Custom 465 stainless, including for medical blades because of these properties. "Custom 465 stainless can be used in a variety of instrument applications, such as for torque drivers, minimally invasive instruments and various hand-held tools where traditional alloys such as Custom 630 and Custom 455 stainless may not always be an optimal choice for these applications when high strength combined with excellent ductility is required. Custom 465 also offers an improvement in corrosion resistance over traditional martensitic stainless steels such as 410 and 420 stainless materials."

Increased popularity of Custom 465 stainless has also opened the door to new business for a number of medical contract manufacturers, including San Diego-based Veridiam – a leading machining and custom metal fabrication company. Veridiam services manufacturers in the dental, nuclear power, aerospace and power generation markets as well as medical OEMs.

The Veridiam Medical Group [2] has seen about a 15% a year increase in the use of Custom 465 stainless in thin wall seamless tubing and cannulated bar forms for its medical OEM customers, says Steve Thornton, vice president of medical sales. This, he says, has helped the company to substantially increase its medical business, which it has grown to about 40% of its overall business, up from about 8% just five years ago.

To date, Veridiam Medical has mainly been seeing Custom 465 stainless used by its endoscopic/arthroscopic and orthopedic OEM customers. However, Thornton says that the company is starting to see increased calls for the stainless alloy for use in dental drills as well. Custom 465 stainless could be a good choice for dental applications because of its high strength, good ductility, improved toughness and excellent fatigue resistance.

Overall, Thornton says he expects to see Veridiam Medical's medical OEM customers double their usage of Custom 465 stainless over the next three years.

Thornton says in endoscopy/arthroscopy, where surgeons perform minimally invasive surgery through a tube, use of thin wall Custom 465 seamless tubing is still not very widespread. However, he has seen growth in its use for applications where edge sharpness, edge retention and material strength are critical.

He notes that while Type 420 and Type 400 stainless steels are considered to be good alternatives for such applications, those alloys cannot be drawn in tubular forms. Some OEMs do use these alloys, machine a sharpened tip that could then be welded to a Type 304 stainless tube. The problem with this, however, is that there could be certain concentricity challenges as well as additional welding cost and handling issues.

"An elegant solution – and one that is typically less expensive – is to use a one-piece tube out of Custom 465 stainless," Thornton says. And several major OEMs have begun to take advantage of this alloy, which, he says, also helps surgeons "to

push the envelope” of minimally invasive techniques given that this alloy has about double the strength of Type 304 stainless.

He says that over the last three to four years one of the world’s largest medical OEMs has taken advantage of the edge sharpness and edge retention properties of Custom 465 stainless for its hysteroscopy system, which provides a simple and safe alternative to full hysterectomies by removing polyps and fibroids and preserving the uterus while allowing pathological analysis of the suspect tissue.

In addition, several of Veridiam Medical’s potential customers are also evaluating the use of Custom 465 thin wall tubing for use in breast biopsies due to its high strength as well as its edge sharpness and edge retention properties.

There has also been growing interest in the use of Custom 465 stainless – both thin wall seamless tubing and cannulated bar – in the orthopedic field. Thornton says one major OEM has switched to Custom 465 stainless from Type 17-7 stainless for a bone punch used as part of a bone graft procedure for coring purposes due to its superior performance and its ease of use by the surgeon, which allows them to ultimately provide a better standard of care.

He says that orthopedic OEMs are also more commonly specifying cannulated bar Custom 465 stainless for applications, including for cutting and shaping instrumentation, impact instruments, drivers and drills, where Type 17-4 and Custom 455 stainless were previously utilized.

According to Guitterez, Custom 465 stainless has better strength, ductility and fatigue properties than Type 17-4 and Custom 455 stainless.

To ensure that it can meet this demand within medical OEMs’ lead time requirements, in the past year Veridiam has begun to stock five different sizes of cannulated bar, as well as buying large heats and quantities of the alloy so it could draw it to desired diameter thin-wall tubing.

“Speed to market is very important to medical OEMs,” Thornton explains. “They don’t have the ability to wait 16, 32 or 52 weeks for material for any given project. We’ve made a commitment to address this issue,” with the help of Carpenter, which stocks a wide range of Custom 465 stainless in 0.1875 inch to 2.75 in. round bars.

Partly due to a combination of more awareness on the part of medical OEMs of Custom 465 stainless and its advantages and increased availability of the alloy (as well as other aspects of its comprehensive marketing campaign), Veridiam has significantly increased its medical OEM customer base and expects to continue to grow the number of OEMs it services and the amount of Custom 465 stainless they consume, over the next several years.
“We believe that Custom 465 stainless will continue to find use in additional applications involving MIS instruments where a balance of strength and ductility combined with improved fatigue life are critical,” Guitterez says.

Source URL (retrieved on *05/20/2013 - 1:20am*):
http://www.mdtmag.com/articles/2010/08/carpenter%E2%80%99s-custom-465-stainless-opens-doors-new-business-veridiam%E2%80%99s-medical-oems?qt-most_popular=0

Links:
[1] http://www.cartech.com
[2] http://www.veridiammedical.com