Lifecycle services

Electron beam welding is a fusion welding process in which a beam of high-velocity electrons is applied to the materials being joined. The workpieces melt as the kinetic energy of the electrons is transformed into heat upon impact. The heat penetrates deeply, which enables the welding of much thicker workpieces than is possible with most other welding processes. The innovation leader in this highly advanced technology is pro-beam systems GmbH. The term 'innovative' not only relates to the company's products, it also comprises its unique approach to services which encompass the entire product lifecycle.

pro beam

The welding is done in large vacuum chambers to prevent dispersion of the electron beam

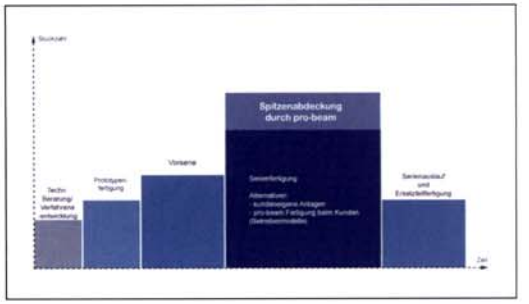
Headquartered in Munich, pro-beam is the undisputed number 1 in electron beam technology. With six operations in Germany and two abroad, and over 350 employees, the medium-sized enterprise is the world's leading provider of services and equipment using electron beam technology. "Electron beam welding has a range of advantages compared to conventional welding methods," explains General Manager Reinhold Wanner. "The heat which is created by the electron beam penetrates deeply into the metal and thus makes it possible to weld extremely thick workpieces or combinations of various metals such as steel and bronze, for instance. All process parameters are directly accessible to electrical measurement and control. In addition, the electron beam moves relative to the workpiece, free of inertia. All of this enables the production of welds of a constant, high quality."

pro-beam has over 30 years of experience in electron beam technology. The company was founded in 1974 by Freiherr Dietrich von Dobeneck as an electron beam subcontractor. He started with one employee and two used electron beam machines – one for welding and one for drilling. Ten years later, the first laser systems were put into operation. "Today, we are equipped with more than two dozen electron beam welding machines, four electron beam perforation systems and eight lasers with powers ranging from 150 W to 9 kW," says Mr. Wanner. As the largest subcontractor in the world, pro-beam produces at several of its own manufacturing plants – seven days a week in three shifts, if required. It can manage everything from single pieces to high-volume mass production, from the production of prototypes to the construction of complete industrial plants.

pro-beam serves a wide variety of demanding industrial sectors, including aviation and aerospace, car manufacturing, electrical engineering and medical technology. The high-growth technology leader ships approximately 50% of its systems abroad. The most important export countries in Europe are France, Spain, the UK, the Benelux, Poland, Russia, the Czech Republic and Turkey. Among the most promising future markets is the USA. In 2007, pro-beam turned over 6.5 million EUR. The objective for 2008 is ambitious. "For the current year, we are expecting to achieve total sales in the order of twelve million EUR," states Mr. Wanner. To a large extent, the special services approach of pro-beam can be made responsible for the company's uninterrupted development. "We offer our customers services around the entire product lifecycle," explains Mr. Wanner. "It starts with technical consultation and initial preliminary experiments. It goes on with the production of prototypes and pre-production processes up to the start of mass production." At this stage, the decision is up to the customer: he can either have pro-beam manufacture the required parts or use his own machinery. In the case of the latter and capacity bottlenecks, the customer can always subcontract peak loads to pro-beam.

Due to the ever-increasing demand for its products and services, pro-beam will be further extending its existing sites. At the same time, the company will enhance internationalisation. "Our objective is to expand our technological leadership in electron beam welding, electron beam drilling and electron beam technology as a method for treating boundary layers while further growing our leading position as a systems supplier," concludes Mr. Wanner. ■

pro-beam can handle everything from the production of prototypes to the construction of complete industrial plants



pro-beam takes an all-encompassing approach to services around the entire product lifecycle

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