

BRÜCK: Single source supplier tackles the toughest orders

The commitment of BRÜCK to provide finished machined forgings and components from a single source to the industry needs' has seen it produce a huge variety of products with traditional German quality and accuracy for decades. With strong roots in the Saarbrücken region (Southwest-Germany), the family-owned company is run on conservative values with a successful business strategy of long term investments and uncompromising excellence. The group's Czech Republic production plant focuses on series parts, whereas Germany acts as the special part and component producer. BRÜCK ensures proximity to customers with its branches in Hilden, Hamburg, Stuttgart/Germany, The Netherlands, UK, USA, Dubai and Brazil. Focus on Nuclear talked to three members of the BRÜCK team to learn how tradition, combined with state of the art technology and innovations such as Express Deliveries are keeping the company in pole position to the nuclear industry.

By Joanne McIntyre

With decades of experience supplying the nuclear power generation industry with premium quality forgings, the nuclear business has been a core strength of BRÜCK for years. "Geographically we've been very active in our home market of Germany since 1923, where we have established an excellent reputation and presence; not only in many of the country's nuclear power plants, but also to the companies serving the nuclear sector with heavy steel components," explains Mr Volker Datzko, Managing Director of Sales & Marketing. "We serve the European countries which include nuclear power in their energy profile. France is the biggest player; other major markets include Finland, Sweden, the UK and Switzerland. Outside Europe we supply parts to the nuclear industry in

India, Japan, Brazil, the US and several other countries."

Throughout BRÜCK's lengthy experience in the nuclear industry the company has gained approvals to supply plants around the globe, including KWU approval KTA 3201.1 (Germany), Areva AVS-D 100/50 and EDF approval (France) as well as IAEA-50-C (International).

Its many code accreditations mean BRÜCK can offer its wide range of forged items to many countries worldwide. In addition to supplying nuclear power plants and utilities directly, BRÜCK's business is also supplying the supporting industries, such as manufacturers of pressure vessels and heat exchangers, piping companies and the entire turbine sector. "Some of our largest customers are companies like Alstom, Siemens or GE. This year we received the Top

Supplier Award from Areva, which was presented to us in June by Ms Anne Lauvergeon, CEO of Areva, in Paris. We are very proud of this Award as Areva is the top supplier to the nuclear



Mr Volker Datzko, Managing Director of Sales & Marketing, receiving the Areva Top Supplier Award in Paris from Ms Anne Lauvergeon, CEO of Areva.





A nozzle being milled in the machining division.

industry in Europe and one of the leading vendors in the world. Receiving this award reflects not only the high standing of BRÜCK products in the industry but also the extremely close, long-standing relationships we have with many of the major players."

Single source supplier

The range of nuclear accredited products which BRÜCK produces from its plant in Saarbrücken is impressive. "From this facility we can basically produce any type of forgings needed in the nuclear industry," explains Mr Christian Hoffmann, Export Manager. "The processes we use are ring rolling, die forging and open die forging. Our workshops are equipped to produce items ranging from just 2 inches right up to very large and heavy pieces; 40

tons in weight for ring rolled items or 50 tons for forged parts. We recently made a significant investment in a new 8,000 ton press. The ring rolling process is very important for suppliers to the nuclear industry who often demand extra large parts. The construction of pressure vessels requires for instance large pieces known as skirt rings. We are able to manufacture these parts up to 6,400 mm in diameter close to the net contour in the forging process, reaching a maximum unit weight of 40 tons."

"The underlying BRÜCK philosophy is what distinguishes us from our competitors in global markets," continues Mr Datzko. "The company's philosophy has always been 'to supply everything to the industry from a single source'. This means we not only do the forging and ring rolling work but are also able to carrying out all machining to very tight tolerances to a few hundredth of a millimeter, plus the capabilities of our Component Building.

We are essentially able to act like three companies under one roof; the first carries out all forging, ring rolling and heat treatment operations."

The second is the Machining Division with more than 100 CNC controlled machines ranging from small to very large in size. Mr Datzko continues: "This section is able to carry out machining very accurately, so we are able to do most industry requirements in-house without the use of any sub-contractors whatsoever. The third business division is the Component Building where we provide design support to clients, carry out joint welding and weld overlay cladding (for instance cladding carbon steel base material with corrosion resisting stainless steel), where the assembly of complex components is done and where we perform a range of testing, such as pressure (hydro) testing and functional tests of Swivel Stacks for FPSO vessels.

The history of the Component Building Division lies in the offshore oil & gas business. Since the 80's the increasing client demands in this sector led to more added value to our forgings. As a first step rotating components in offshore FPSO oil & gas exploration, so called swivels, were machined to finish dimensions of a few hundredths of a millimeter in tolerance. Not an easy job to do, as the materials were solid Duplex and overlay weld cladded components.

We opened the first of our two weld shops at that time. Today everything is done in-house by BRÜCK: forging, weld cladding, finish machining, and assembly of the various swivels in the swivel stack (including additional parts, such as the complex sealing system). At the end functional tests are performed reaching peak pressures of 1000 bar and more. Based on this experience BRÜCK today supplies fully pressure tested weld components to the (nuclear) power plant sector as well.

This three-pronged approach means we can supply very complete projects from one single location to all industries and especially the nuclear power plant industry. That's a particular and unique strength of BRÜCK which, combined with our strength in express deliveries, makes us a very powerful supplier to the nuclear industry."

Backing up all production at BRÜCK is an extensive quality control department. Mr Gauer, Sales Manager continues:

"In total the company has around 1,000 employees, so the 30 people employed exclusively in quality control represent a large proportion. As we are a single stop supplier, supplying complicated items for all markets including nuclear, we are frequently faced with highly complicated specifications which means we need to have the in-house knowledge and manpower in quality control."

Extensive internal training is offered to the Quality Department staff at a frequent base as well as the time and opportunity to develop skills in response to the different challenges of the market. "Of course in addition to the nuclear industry we are also working in all of the energy sectors, which require an investment in highly qualified staff. Our long experience over the years has allowed us to build up a lot of expertise."

Express Service

"We have been successfully offering Express Deliveries to the nuclear sector for quite some years," explains Mr Datzko. "Within BRÜCK a dedicated group of people organizes urgent deliveries which are often of critical importance for nuclear power plants. These orders typically arise when plant maintenance reveals defects in a piece of equipment which must be replaced with urgency, requiring highly qualified and approved partners who are able to rapidly supply the necessary parts even in





Ring rolling in progress at BRÜCK's Saarbrücken facility.

times of high work load. We have been meeting this demand for decades. It's a highly specialized area of work to be involved in; the specifications for these parts tend to be very complicated and require a huge amount of documentation. An inexperienced company would never be able to achieve this. We are proud that the Express Service is one of our specialties and that we are able to deliver parts in a matter of days. Despite parts for the nuclear sector often requiring very complicated machining and being constructed of sophisticated materials,

such an extensive organization within our company which deals exclusively with Express Service orders," explains Mr Datzko. "When plants urgently need our support and assistance they know they can rely on us, particularly when it come to Express Deliveries; we keep thorough records and in the past few years we have consistently scored above 97% in terms of reliability and delivery." "Trouble shooting is one of our key skills which is invaluable to nuclear power plant operators, which is important because when an operator discovers a problem

BRÜCK offers a wide range of high quality forged items to the nuclear sectors in many countries worldwide

we are able to perform delivery within 5-20 working days, compared to normal production delivery time of 20 weeks and more in times of high market activity. If the part is required in Germany or in neighbouring countries it is supplied by special express transport to the location; for international customers we fly the part to the site." "We are the only forging company in the world to have

in a plant, they always check the other plants of the same type as well. In some cases the part in question will need to be replaced in several power plants in that country or indeed around the world. We have positioned ourselves at the forefront of providing the service capabilities to help them solve these issues with the minimum of disruption to their operation."

parts. We have also expanded our ring roller capabilities and can now produce components with a maximum diameter of 6,400 mm and up to 40 ton ring rolled weight."

For the future Mr Datzko explains that BRÜCK will continue to respond to the needs of its clients, developing new materials and continuing to be in the position of supplying all parts





BRÜCK has supplied a wide range of forged products to the new Okiluoto plant in Finland.

singlehandedly without sub-contracting. "At the same time we intend to communicate our knowledge and experience worldwide. As our presence continues to become increasingly global, we will adapt to the countries and regions we serve. We already have staff who speak many different languages so we can communicate with clients around the globe in their own language." "Key areas for development include the Middle East, Asia, particularly China and India, also the Americas - North America, Latin and South America - as well as Russia. There are also a lot of developments in Europe and we will continue to serve countries where we have traditionally been very strong, such as Germany, France, Scandinavia and the UK. For instance we have supplied large orders to the two major nuclear projects presently being realized in Europe, the Areva EPR reactors Okiluoto 3 in Finland and Flamanville in France." The various regions of the world all have their own individual political scenarios for nuclear power generation, states Mr Datzko. "While on a percentage basis China and India are both still using a huge amount of coal and nuclear will only make up a small part of the overall energy mix, investments are being made and we will see some large projects in the future. In some parts of the world nuclear energy is seen very critically, while in others it's seen as a renewable energy, which is a very interesting development. The bottom line is that nuclear power is a clean and in principal renewable energy, provided that highest security standards are being applied."

Family-run company

One factor which sets BRÜCK apart from many of its competitors is that it has always been a family owned company. Founded in 1923 it is managed with a very conservative philosophy of constantly reinvesting profits back into the company. "This is a tremendous advantage," explains Mr Datzko, "as it ensures there is a continuous process of development in many directions within the company which will continue for decades to come. The shareholders are Matthias BRÜCK and his sister Anne BRÜCK, both of whom are very active in the company. Because the company is not share-holder driven, investments are oriented to the medium and long

term and are not expected to be paid off within two or three years. The fact that this is a family operated company is very attractive to employees and one of the reasons people come to work with BRÜCK."

This philosophy sets the company apart in the global market as the company is able to maintain its status as a complete single source supplier, free of dependence on sub-contractors. "The difference is significant because the investments in machinery and processes in our sector often run into the tens of millions of euros. If we see that our customers want something from the sector which we cannot provide today, the company will invest for the long-term perspective. We enjoy taking on complicated specifications and challenging jobs and our strategy is always to provide a good balance between the price of our products and our performance."



Skirt rings for pressure vessels prepared for transport

Facts & Figures

Name:	BRÜCK Forgings
Founded:	1923
Headquarters and production plant for special parts:	Saarbrücken, Germany
Production plant for series parts:	Czech Republic
Branches:	Hilden, Hamburg , Stuttgart/ Germany, The Netherlands, UK, USA, Dubai and Brazil
Products:	Forged and seamless hot rolled rings, flanges and special forgings, including finish machining to tight tolerances, joint welding, overlay weld cladding, assembly of components and pressure (hydro) testing
Manufacturing materials:	Carbon steel, stainless steels, nickel-based alloys, aluminum, titanium
Turnover (group):	above EUR 200 million/year
Employees:	1,000

