

GRUPO EUSKAL FORGING



Introducing ring rolling machine RAW 1000/1000

Editorial: Rosie DeWinter



Total World Energy speaks to seamless rolled ring specialist, Euskal Forging, who has established an impressive position as world leader manufacturer for wind turbine foundations. With its fifth ring rolling machine ordered from SMS Meer on its way and set to be the second most powerful one in the world the company has built to date, the new ring rolling machine will allow Euskal Forging to produce rings with a 10.2 meter diameter.

First founded in the early 1970's by current owner Mikel Redín, the company started the ring rolling processes by the 1980's.

"Mr. Redín started the business rolling rings up to 1.5 meters and 400 kilos each. Now we are

reaching five ring rolling machines and our capacity goes from 0.5 meter diameter to 10.2 meters, from 30 kilos to 80 tons, so we can say that is the widest manufacturing range in the world," explains Mr. Jose Luis Azurmendi,

Commercial Director at Euskal Forging.

As of this year, Euskal Forging now manufactures seamless rolled rings and flanges with a maximum outer diameter of Ø10.2m and with a maximum weight of

approximately 80 tons.

With three manufacturing locations - 47,000 m² covered area - in Northern Spain, Euskal Forging ensures the quality of its products by ensuring it employs the finest raw materials, including the highest quality vacuum degassed steels in carbon, alloy, stainless, duplex steels and super alloys.

With a wide and extensive variety of raw materials and with the company's strong commitment to its customers, the heating process is then carried out in ten gas furnaces that can be programmed to automatically execute heating curves.

The manufacturing continues with an automatic punching process which is considered to be the most innovative design within the sector today.

Lastly, the heat treatment, perhaps the most critical process, is carried out at Euskal Forging's

facilities with the use of further advanced technology to provide different treatments, including normalising, annealing, quenching and tempering.

EXPLORING NEW MARKETS

"Our approach varies based on the different industries that we are looking at. Today, we can say that Euskal Forging has been able to put the company into new growing markets," Mr. Azurmendi explains.

"I'm not speaking geographically, I am speaking about the nature of the markets. In the offshore wind industry, we are currently world leaders when it comes to flanges for the foundations. Last year we bid for six projects and we won five of those highlighting the market share that we have today.

"So our approach is more on intelligence and supplying know-how to the supply chain in order to make the market possible. We

are improving our technology and the mechanical properties of the products that are used today in these industries, specifically in the offshore sector as this is becoming increasingly demanding," explains Mr. Azurmendi.

Deputy Commercial Director, Mr. Josu Ortego explains that the Oil and Gas industry uses a similar strategy to that of the offshore wind industry in terms of technology but implements a different approach in offering a one-stop shop solution.

"For these markets the company has a similar service approach to the customers. Traditionally we were involved only with the production of the rings, but in the last six or seven years, we have started integrating more added value to the products, such as machining, gear-cutting, welding, induction hardening, basically anything that the customer might need to have a product ready to be





assembled.

“Also the new investments will allow us to produce rings up to 10.2 meters, which are quite in demand for certain applications in the Oil and Gas downstream industry like Coke Drums. We hope the market will continue along this path and substitute existing products with our technology thanks to this new machine,” Mr. Ortego adds.

SMS MEER CONTRACT

This powerful machine was ordered in September 2013 - Euskal Forging's fifth ring rolling machine from SMS Meer - which is set to be the second most powerful ring rolling machine that SMS Meer has built to date.

The new radial-axial ring rolling machine will allow Euskal Forging to extend its production spectrum to produce rings up to 80 tons in weight, a maximum ring diameter of 10.2 meters and maximum height of 1.7 meters.

The Raw 1000/1000 machine will be fitted

with modern ancillary equipment so products such as the tower flanges built for wind turbines for example, can be produced on a cost-efficiency and cost-effective basis. This will help to ensure Euskal Forging continues to meet the ever increasing demands of the industry for larger rings as wind turbines become taller and larger generators are needed up to at least 8MW, especially for the offshore sector.

The new innovative ring rolling machine will be installed at Euskal Forging's plant in Sestao with commissioning starting this year.

“For the new machine we have focused in three different areas: Firstly, getting this diameter to support rotating machines whose diameter is always getting bigger, up to eight or nine meters, so we have to be ready for that. Secondly, the power of the machine is also very important for us so we can roll very big sections of about 1.5 meters; with section we mean the

difference between the outer and inner. There are some markets which traditionally have a lot of problems to get this type of product with big sections because the power needed to roll them is very high and they have to use alternative processes like free forging.

“Finally, the height, currently we are getting 1.7 meters with this machine, so for certain nuclear and oil and gas applications, we can replace the more traditional method seen today. With this new machine, we believe these three areas will be the factors for our success,” Mr. Azurmendi explains.

Historically, the big rings and gears would be made from castings, but with this new machine and progress in technology, the traditional production method can be replaced with a more cost-effective alternative and a cheaper solution for Euskal Forging customers.

“In the offshore wind industry, we are currently world leaders when it comes to flanges for the foundations”

“Let's say that our approach in some areas is to go into new industries and try to be ready for the new technology, especially for the offshore. Secondly, to see in which markets we can replace historical production methods with our products to reduce the

cost significantly,” explains Mr. Azurmendi.

A COMPETITIVE EDGE

Mr. Azurmendi explains that Euskal Forging has developed a strategic approach that is very customer centric: “We have defined ourselves as part of their supply chain so we are very much focused on ensuring we reduce the costs for our customers allowing them to win orders and to make the product more competitive. Our service, customer support, relationship with customers and understanding of their needs is important. We give them support in terms of our knowledge and integrating added processes that otherwise would have to be sub-contracted.”

In addition to valuable customer service, Mr. Azurmendi includes

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innovative machinery and its plant location amongst its competitive attributes: “We are prepared with state of the art machinery, especially with the latest new investments we have done at a strategic location,” he explains. “My career, with 30 years in this business, shows me that in the demanding markets we work, the price is not always the key factor. There are factors like quality, time-management and no mistakes – which, at the end of the day, help to make a product that is cheaper than the one from our competitors.

“One contributor to our ‘just in time’ factor is our location which in some cases makes the project possible. Last year we did a full study of the rivers in Europe that can be used for transport and we have found that we are able



RING ROLLING MACHINES GAINING MEASURABLE ADVANTAGES WITH A STRONG PARTNER

Ring rolling machines and plants from SMS Meer, characterised by cost efficiency, precision and long service life, produce high-precision state-of-the-art rings with profiles coming very close to the desired final contour. The portfolio extends from individual machines such as ring blank presses, rolling machines and ring expanders through to complete and fully automated plants. Thanks to the modern automation system with its own control desk, the process parameters can be adjusted quickly – for seamless process integration. The result: Integrated plant solutions in which all components are efficiently matched to one another.

Quality unites – a fact that our customers and we discover time and again with every new project. Together we develop solutions that give our partners the competitive edge in their business. Thanks to this good cooperation, SMS Meer is a leading international company in heavy machinery and plant engineering.

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to reach by barge, 90% of the customers that use very large rings. Firstly, we load the rings directly from our quay into the boat and at the closest main port to the customer, straight onto a barge that delivers the ring into the customer's site. This is very important, we recently won an order for a customer, to deliver several rings of more than nine meters and more than 40 tons each and the only way to make this possible was to deliver them by boat."

"The location by the harbour is therefore a key competitive advantage for us, when it comes to the transport of especially large rings which can reach more than seven meters. This is very special and unique and there's nobody else in Europe that has that availability, and only a few in the world," explains Mr. Ortego.

CURRENT INVESTMENTS

Talking of current investments for Euskal Forging, Mr. Ortego explains that at its Irura plant, the company is focusing on new areas, namely super alloys: "This arm of materials goes mainly into the aerospace and the Oil and Gas sector. For that, we have carried out the investments defined by the engineering team and increased our engineering head count. Investments in machinery include the press and ring rolling machine, to control and be able to work in a more precise way like these materials require. In heat treatment, the furnaces need to have a very tight control of the temperature and we have done the investments to adapt those furnaces to be able to work in the aerospace sector.

"Additionally we are investing to get the approvals from the end customers and OEM's (Original Equipment Manufacturer). We are running different trials with them to get the qualifications," Mr. Ortego adds.

"In Sestao, in line with the new ring rolling machine up to 10.2 meters, we are also buying and installing heat treatment furnaces up to 10.2 meters," explains Mr. Azurmendi. "This means that we can now supply our rings in black condition or machined up to 10.2 meters."

A FOCUS ON SUSTAINABILITY

With an impressive position as world leader manufacturers and playing an important role

within the offshore wind industry, sustainability is certainly a subject that Euskal Forging take very seriously.

“We are working in offshore wind but we have also moved into more renewable sectors like hydro power and we are currently in talks with leading hydro power companies. Presently, we are working on projects in Austria and in the South of Germany so there’s a lot of focus over there to generate electricity through these type of turbines.

“Obviously our interests are focused on renewable energy because the machines and turbines are much bigger than in previous years. When we decided to start thinking four years ago about the new ring rolling machine up to 10.2m - we had to analyse the growing power of the machines and the size of the components. So

this has been the driving factor for buying this machine,” explains Mr. Azurmendi.

Additionally, Euskal Forging also follows environmental standards, namely the ISO: 1401. “There have been recent investments to have regenerative furnaces which will help to reduce pollution and consumption of energy by around 30% or 40%,” Mr. Ortego explains.

This regeneration of the heat is a very positive and important move for Euskal Forging, particularly from an expense point of view.

A POSITIVE FUTURE

For Euskal Forging, over four decades on, Mr. Azurmendi explains that the future now lies in two directions: “In our Irura Plant – where we are making rings up to four meters - the focus is on more demanding materials, this is

very clear. We see our customers are developing smarter products using less material so this indicates that the grades used have to achieve higher mechanical properties and therefore we are dedicating a lot of time to our research department.

“In our Sestao plant, we are focusing on very big equipment in various locations and sectors like offshore wind. Today some OEMs have a 6MW wind turbine approved and there are certain developments in bigger machines for the offshore wind energy up to 10MW, so we are ready for that. There have also been developments for big equipment within the Oil and Gas industry, rotary equipment within the mining and cement industry and the bearing industry,” concludes Mr. Azurmendi :





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