Built to Last. In Challenging Conditions, These are the Guys to Call.

OGI interviews Antti Häkkinen and Olli Koivisto, Sales Manager and Business Development Director respectively, from Finnish engineering company Konepaja Häkkinen Group, to get background insight in how engineering companies make quality components which last through the toughest conditions, and sometimes save company's from dire consequences. Häkkinen Group is known throughout Europe as an uncompromising subcontract manufacturer of large and challenging components, and seeks to expand its engineering prowess globally.

OGI: Could you start by explaining Konepaja Häkkinen Group's credentials and experience in terms of your products and services in the Oil and Gas sector? Could you tell our readers the breadth of your experience, how long the company has been active, and its worldwide reach?

Häkkinen: Konepaja Häkkinen Oy is a Finnish private owned company established by two entrepreneurs in 1980. We initially started to serve the Finnish machinery manufacturers. Over the decades the majority of these clients have grown organically, been merged or acquired and have become large international companies which have resulted in the Häkkinen Group to also look to become more and more internationally focused over the years.

The core business of Häkkinen Group is demanding medium and large scale precision machining and steel fabrication. Today we have four large operations in Finland totaling 55,000 m2 of heated manufacturing area and over 300 true professionals.

Our journey in energy sector had already started in 80's and we started manufacturing subsea oil and gas components around ten years ago. Today we serve our oil and gas customers with state of the art facilities and machine bases for machining and welding, but also for shrink fitting, clad welding, heat treatment and NDTs. Components manufactured by Häkkinen Group for the main contractors and machinery manufacturers can be found in gas turbines for instance, but also in propulsion systems, top side equipment and

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Subsea systems from the offshore oil fields around the world.

OGI: What services do you specifically offer the oil and gas industry?

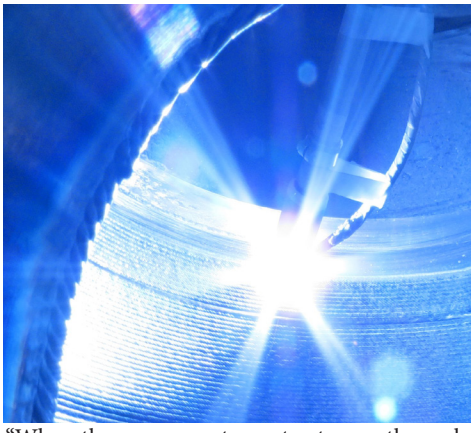
Häkkinen: We are focused on providing demanding parts/components subcontract manufacturing. For example we are manufacturing demanding components for subsea oil and gas including components such as master valves and wing blocks, special joints, manifold components, tubing hangers, LRPs, and EDPs to mention a few.

The materials we machine vary from typical low alloy forgings to HIP Super duplex and Alloy 718. Clad welding is based on Alloy 625 but we also do hard facing with Alloy 718 over Alloy 625. The materials we use in our steel fabrication (structural welding) range from structural carbon to heat resistant steels and different grades of stainless steels.

Repairing and refurbishing of components is also integral part of our solutions. We carry out a lot of component inspection, repairing and modification work in our workshops for our oilfield and energy sector clients.

OGI: When a client requires machining and/or welding work done, one of the most important factors is quality. Could you comment on how Häkkinen Group invests in production to make sure that its clients receive the best finished product?

Häkkinen: The most important point is skilled, well trained operators. We pay a lot of attention to recruiting educated, skilled people and providing a thorough step by step induction and development path in-house. Next comes continuous investments in modern machine base and the third point is good up-keeping and maintenance of all the machines with proper maintenance procedures and documentation. These basics are prerequisite. Process-wise, we at Häkkinen Group believe in ensuring the quality during the manufacturing process (built-in quality). Having a tight post-processing quality control is the final security gate, however, high quality



"When the components are to stay on the seabed for some 20-30 years it is vitally important that the components have been manufactured to the correct specifications.."

isn't born at final inspection but during the process. This means having the right people, right machinery and right processes in place. In addition to built-in quality we also follow other lean principles/tools such as 5S, continuous improvement, problem solving and elimination of waste.

OGI: The industry is increasingly producing in challenging areas, especially subsea. In these sometimes extreme environments, it's of utmost importance that a producer's components can withstand these pressures. Could you comment on why Häkkinen Group is such a reliable partner in such conditions?

Häkkinen: Naturally our client's design plays the biggest role in these particular situations. The value we add as a subcontract manufacturer is truly the well managed manufacturing processes ensuring quality of workmanship and timely deliveries. When the components for these very challenging conditions are manufactured precisely to the tight tolerances given to us, the components also fit perfectly together at the customer's final assembly process. This has an impact on overall quality and lead time of the complete solution our customers are selling.

One additional point is the collaboration with our customers - meaning giving feedback on their designs in order to improve the manufacturing process and that way reduce the risk and cost during the manufacturing. Basically we help our customer's bottom line.

When the components are to stay on the seabed for some 20-30 years it is vitally important that the components have been manufactured to the correct specifications, which reduce the costly risk of having to lift the equipment back to the surface for premature repairs.

OGI: Could you explain Häkkinen Group's expertise in submerged arc welding (SAW)? If possible an example of how this method is applied and the advantages?

Häkkinen: Häkkinen Group has been using the submerged arc welding (SAW) method for heavier welding of different structural carbon, stainless and heat resistant steel grades for many years. SAW provides higher heat concentration resulting in clear benefits such as higher welding speeds and less distortion. Higher heat intensities

can be generated and kept concentrated to weld thicker sections with deep penetrations.

Submerged arc welding is also carried out without sparks, flash and spatter. Smoke levels are also very low, improving the HSE conditions. From the weld quality point of view the weld metal deposit has good uniformity, ductility, corrosion resistance and impact strength. The visual quality is also very nice and smooth weld shapes can be achieved.

OGI: Why is Häkkinen Group such a reliable partner for oil and gas clients?

Häkkinen: Everything starts from understanding the customer needs and investing in our competence and processes to meet those needs. Our machine base and premises, skills and knowledge as well as HSQE processes and project documentation are continuously improved to meet the requirements of our customer base. For instance, over the past two years we have invested over 10 million Euros in facilities and machinery including Europe's largest coordinate measuring machine (CMM). Most importantly, we have just been certified for OHSAS 18001 enabling us to answer our customer's call for continuous improvement in health and safety aspects even better. This is in addition to ISO 9001, 14001, 3834-2 and EN 1090 EXC4 certifications that we also possess.

In addition to those largely tangible attributes, there is also a couple of other important aspects: flexibility and a "make it happen" attitude. The beauty of a privately owned business is that decision making can be very fast and very much customer focused. Also, the use of business intuition is still allowed and valued.

One specific area where Häkkinen Group can also add value to our customers is support for rapid prototyping. As mentioned we are a nimble organization with vast selection of different machines and methods. We have the experience to manufacture different kind of parts even from challenging materials. We often produce one-off components including prototypes and are used to providing feedback to the customer for continuous improvement from the manufacturing point of view. This way we can support our customer's rapid prototyping process and provide valuable information for the iterative product development project.

OGI: Finally, could you enlighten our readers of a particular case study where you helped a client with your solutions?

Häkkinen: Recently there was a large subsea oilfield development project on the coast of Africa. The oil company and the main contractor handling the project ended up in a situation where the timely go-live of the field was in great jeopardy with risk of massive financial consequences. One of the demanding component types (made from Alloy 718 forging) which are installed in the wellheads before the Christmas tree can be lowered in place, had emerged to be challenging for the selected supply chain. When manufactured up to specification, it caused a large share of the components to be scrapped during the manufacturing process, which again resulted in severe delivery time problems. Häkkinen Group was given the opportunity and we jumped in to help our customer. Not only did we manage to reach the required quality but we were also able to speed up the manufacturing process and catch the project up to schedule. Based on the feedback from the oil company Häkkinen Group had saved their project. it's no question the words from our important end customer carry us far in the future.

OGI: Thank you for your time. •

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If you would like more information on how Häkkinen Group can help your operations please see their ***Website****: www.konepajahakkinen.fi*
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