



Data system to control the whole Steel Service Center process

Rautaruukki / Metals and Construction

Rautaruukki

Rautaruukki Corporation, which uses the marketing name Ruukki, is a Nordic steel company supplying metal-based components, systems and integrated systems to the construction and special steel industry. The company has divided its operations nowadays into two main divisions: Ruukki Construction is responsible for life cycle and energy-efficient building and infrastructure solutions and Ruukki Metals for energy-efficient special steel products.

Ruukki has around 9,000 employees in some 30 countries including the Nordic countries, the Baltics, Russia, Ukraine and Central Eastern Europe.

Steel Service Centers

Ruukki's steel service centers in Finland, Sweden, Norway, Russia, Poland and China offer prefabrication services based on customers' needs. The services by own or through the subcontractor network cover plate part cutting, sawing of profile materials, coil slitting, cut-to-length, machining, surface finishing services, slitting and cut-to-length, cutting, bending and laser welding.

Steel Construction

Ruukki Construction produces construction components that are combined with strong design, prefabrication, product management and installation services to offer steel structure solutions for commercial, office, industrial and infrastructure construction such as foundation, frame, roof and wall components, system halls, panels, steel roofs and bridges, just as a few examples.



DEVELOPMENTS

NESTIX has developed broad functionality for Ruukki to fulfill the customer's demands

NESTIX has more than 25 years of experience of close co-operation with Ruukki in the steel prefabrication, quarto plate production and assembly production. During this period, dozens of advanced features have been developed. In the following, several of these developments are presented.

Cost based order pricing

Sales order calculation is based on material and workshops costs taking the part geometries, all work phases and working time into consideration. Nowadays, this ensures accurate cost calculation and transparent pricing of end products.

Order management

Sales orders are converted to production orders with all production information. The production situation compared to plans can be observed in real-time.

Work planning and work preparation

With the work planning features, the material utilization and the work-load of the machinery and people can be optimized leading to efficient production and just-in-time product deliveries.

NC programming of cutting machines

Started with the basic cutting features, new NESTIX Cutting software is now able to control all major cutting technologies including oxy-fuel, plasma, laser and water jet with automatic bevelling and marking features. It optimises the plate material, remnants and the cutting capabilities.

Material management

The material is managed at the individual (raw material and remnant) and article-level. The material is controlled by the stock and the amount of intermediate stocks by material forecasts and reservations and in the process in geometries and remnants.

Work queue and workload management

NESTIX estimates the production workload accurately, because real geometric information is used to estimate the process time. The scheduled works are managed into work queues for all workshops and work places.

Production follow-up

The real-time follow-up of the prefabrication, including cutting, surface finishing, assembly, other work phases and subcontractors have been achieved with workstations in all the workshops. The system manages work instructions and the production information of the work statuses, material utilization, working times, production quality and machinery OEE.

Production quality

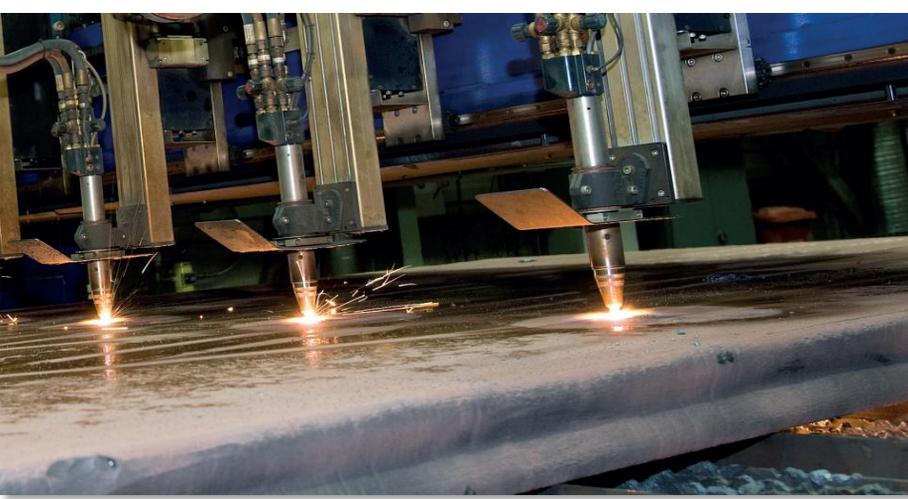
Precise traceability has been achieved as the production history is now traced in every working place and every part can be traced to a material individual (charge number in casting). The product qualities are controlled with measurement checks, quality reports and certificates.



“NESTIX’s sales pricing tools are very useful. We are able to exactly calculate our own costs for all the parts as the material costs and- the working time workshop costs are taken into account. This guarantees the quotations we give are precise and the orders we get are always profitable.

The best added value of NESTIX is that we can manage the whole production chain in one data system, from quotation to delivery of the prefabricated products – and just in time. The rate of material utilization and efficiency of workshops are also achieved with the help of NESTIX software.”

Marko Tyynismaa
Concept Owner,
Ruukki Metals



Over 25 years of co-operation between Ruukki and NESTIX

NESTIX supplied the first data system for the steel service center Aspo Oy in Seinäjoki, Finland, in 1985. The software system consisted of the nesting function. Ruukki took over the business of Aspo in 1988 when Ruukki became interested in the steel pre-fabrication business.

Ruukki bought several other steel service centers later on in the 1980s and early 1990s at the same time as Ruukki established the first brand new steel service centers. Cooperation with NESTIX developed in the beginning based on the similar concept as that which was started with Aspo Oy. In the 1990s, NESTIX started to develop its systems further together with Ruukki in response to customer demands. The first versions of functionality for sales tools, order management, inventory management, work planning and production scheduling were thus developed.

In the 2000s, the steel prefabrication business has increased strongly globally. Nowadays, NESTIX plays an important role in the control of parts fabrication in the steel service centers of Ruukki Metals, but also the part fabrication and welding assembly production for steel construction in Ruukki Construction. Furthermore, NESTIX is used in Ruukki Metals to control the quarto plate cutting at the steel works in Raahe, Finland. The NESTIX software has been further advanced and modernized in co-operation with Ruukki on several occasions over the years.

NESTIX role in Ruukki

“We studied different approaches to data management for our steel prefabrication business. In terms of functionalities and costs, we came to the conclusion that we needed to have two systems with their own roles: SAP ERP is responsible for enterprise-level planning and management, NESTIX SSC

takes care of production control in the prefabrication shops at the detailed material and order-level. The concept works very well in practice when the systems are interfacing seamlessly with each other for data sharing and integration”, says Mr. Jussi Juvani, Director of Corporate IT Services in Ruukki.

The amount of contemporaneous NESTIX users at Ruukki totals more than 300 people. NESTIX principally serves Ruukki on a 24/7 basis.

How have users accepted the system?

The NESTIX systems are widely used in the Ruukki owned steel service centers and steel construction workshops in the Nordic countries, Poland and China.

The operators in the workshops and users in the offices accept the system and are broadly satisfied with its integrated functions. NESTIX has always been flexible and responsive to customer needs in the development of its systems.

“NESTIX is always doing its best to serve us well. I would call them a long-term, reliable partner for Ruukki”, Mr. Juvani says.

Strategic partnership

In 2011, Ruukki and NESTIX agreed to strengthen the co-operation to the level of strategic partnership. In practice, this means that in the field of part fabrication, NESTIX takes part in early-phase strategic planning to enable the development of features that match with the regenerated demands of the customer. Long-term relationship and a deep understanding of the customer’s business, are the key competencies of NESTIX which help them serve Ruukki successfully.

“We have some seven steel service centers to manage at Ruukki. Our centers need integrated data systems to create synergies and to serve our customers reliably and just in time. With NESTIX we have established a close, long-term co-operation which we benefit from in many ways in the steel prefabrication business. Our production is under control and we produce parts and assemblies that match with the highest quality standards.”

Sakari Kallo,
Senior Vice President, Production,
Ruukki Metals



BENEFITS gained from NESTIX software at Ruukki

Control steel service center
Sell accurately
Shorten throughput time
Save material
Reduce person-hours
Utilize machines efficiently
Improve quality

Integrated data system for prefabrication and assembly production

One data system, NESTIX SSC, covers the needs of part fabrication and welding assembly, and also quarto plate cutting. NESTIX is a specialized software that supports steel service business to be profitable. NESTIX is successfully linked to the SAP ERP system, which takes care of its responsibilities in financial administration, sales and invoicing after the works have been completed in the prefabrication.

Networking over the production sites, customers, material suppliers and subcontractors

Ruukki's prefabrication sites work closely with each other to create synergies in supporting end customers. Many of these sites are integrated into one NESTIX data system, to give maximum synergy, flexibility and transparency in controlling the business. NESTIX includes software tools for building efficient co-operation for material dispatching, subcontracting and customer partnership.

Precise sales

As NESTIX considers the material cost, part geometries, workshop costs and multiple customer orders in the same nesting, the prefabrication service pricing with NESTIX is accurate and it helps to accept the profitable orders only.

Better utilization of steel materials

Advanced material forecasting, reservation and purchase management in NESTIX has reduced the size of material stock. Detailed control of orders, geometries, materials, remnants and production machinery, together with integrated nesting of parts, have improved the material utilization.

Improved utilization of resources

Sophisticated shop floor control by scheduling the production and its work phases into work queues, estimating the workload of the production machinery and operators as well as following the status of the workshops in real-time have improved production efficiency remarkably. Through-put times have been shortened, thus increasing the prefabrication capacity and the amount of end products.

Quality in control

Detailed follow-up of individual materials and their locations from purchasing stock to the end products, including all the work phases, means full traceability of the production history, leading to improved quality of the production and the end products.

