

## Clear Lines

**ROB-ELECTRONIC drastically reduces its delivery times and stocks by restructuring its production with Rexroth's Manual Production Systems**

**ROB-ELECTRONIC GmbH's electronics production has taken a quantum leap thanks to a complete redesign of its production. This is illustrated by an increase in adherence to delivery schedules to over 90 percent and a 35 percent reduction in stocks. The current production line is based on Rexroth's Manual Production Systems (MPS), which offers decisive benefits such as transparency, ergonomics, and modularity.**

Located in Neulingen, Germany, ROB- ELECTRONIC GmbH mainly wanted to shorten its delivery times and increase output. As one of the leading contract manufacturers of electronic assemblies and systems, they often welcome customers from various industries, including automotive electronics, automation, building services engineering, safety engineering, and measurement and control technology to the facility where they develop and manufacture their electronics systems.

"However, appearances also play a large role in our industry," explains Technical Manager and engineer Frank-Martin Rammelt. "In addition to hard facts, a good appearance in our production area works as an extra marketing tool," he said.

The arguments for converting production were comprehensive, but restructuring was another crucial factor in making this particular decision. It all started when Rexroth held an ergonomics workshop at the electronics specialist's company. The existing manual workstations were closely examined, new ideas noted, and the first stand-up/moving workstations ordered from Rexroth.

### **From a workstation to a complete production line**

It was soon clear that further changes would be necessary, and the entire production area, including materials management and planning, was subject to close scrutiny.

"Our four manufacturing segments – SMT and THT equipment, as well as assembly and testing – must be integrated seamlessly. This is why we used lean production methods to develop a new concept to optimize the entire

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production chain, and we keep including further modules from Rexroth's Manual Production Systems," explained Rammelt.

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The MPS program is based on the aluminum modular profile system found in Rexroth's Manual Workplace Systems program. This modular system has been developed in line with strict ergonomic and logistics guidelines. In addition to workstations and the associated accessories, it also includes material supply modules such as flow racks, material trolleys, and grab containers, as well as components to facilitate material flows and linking. Reliable electrostatic discharge (ESD) is also ensured, as all components come in an ESD version. Users can optimally combine the components using the Rexroth MPScalc planning software. Rexroth offers a complete concept, from consultation based on comprehensive expertise, to hardware and software, as well as implementation services.

### **Linked, adapted, and efficient**

MPS can be used to quickly and efficiently design and adapt individual workstations, and complete production and assembly lines, to fit the respective work contents. This was especially important for the electronics manufacturer, because around 200 employees manufacture almost 200 end products of varying complexity in batch sizes ranging from 10 to 5,000 units at the Neulingen plant alone. This variety and the fast turnover of orders demand a very high level of planning and production flexibility, and as a result, modular equipment. The company quickly went from being concerned with ergonomics to also integrating one-piece flow, the pull principle, and kanban – a comprehensive approach to fulfill demanding customer requirements and increase competitiveness.

Research showed that ROB-ELECTRONIC could achieve possible savings of approximately 500,000 euros (approximately \$635,000) by optimizing production. According to Rammelt, this clearly pointed to the need for lean production, which focuses on avoiding waste and reducing everything that does not add further value.

Markus Hösel, Assistant to the Technical Manager at ROB-ELECTRONIC, adds in retrospect, "Until then, we had a long list of factors in need of optimization, such as waiting times, inefficient processes, errors, unnecessary employee movements, and high stocks."

### **No hectic operative pace**

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Based on his years of experience as a consultant, Rammelt knew what the first step was. "We had to start thinking differently. Instead of the usual hectic operative pace and highly intense work, we now concentrate on efficiency." This includes numerous factors: The material has to flow and not stand still; large accumulation and storage areas in production were therefore reduced to a minimum. Production parts should not be picked up several times, as this is inefficient. Better production management means that orders are only sent to production after all the required material has been supplied, so there are no delays.

For Rammelt, the bottom line is that, "Today, we have reduced all processes down to the basics, have clearly defined responsibilities, clear identification, and a high level of transparency."

Hösel names the ergonomic workstations from Rexroth as the best example of the new concept. Instead of settling on a catalog solution involving numerous compromises, the electronics manufacturer was able to create its own standard with MPS and configure all the system components' size, shape, layout and arrangement to precisely fit the respective work contents and employee needs.

### **Recognition leads to well-being**

"We now have workstations tailored to the specific tasks and a high level of recognition that makes employees comfortable and increases their well-being," notes Rammelt. "The fear of having to learn a new task quickly has been greatly allayed thanks to workstation standardization."

At ROB-ELECTRONIC, this conversion to modern production methods led to an increase in the adherence to delivery schedules of over 90 percent, while simultaneously reducing stocks by around 35 percent. Hösel believes the main reason for this success is down to transparent production.

"In-house communication has been substantially improved and the sales department can now provide binding information to customers, which frees them up to work on acquiring new orders," Hösel said. "In addition, we are able to provide our suppliers with better information thanks to systematic production planning and control."

Rammelt and Hösel are excited about this success and the future possibilities, and confirm that further projects are underway. The recently completed restructuring will be fine-tuned and Rammelt adds that kaizen

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principles will be applied in the future to see if there is further room for improvement.

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*(4.1 billion Euro) with 34,200 employees.*

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