

# DRIVING AUTOMATION

**Increasing the level of automation in wire processing is a joint journey together with the customer. In the industrial market segment, the Komax Group is supporting major players such as Siemens in the US to raise their level of automation for greater efficiency and quality.**

The Komax Group has defined the development of non-automotive markets as one of its key strategic priorities. Within this focus, the industrial and infrastructure segment stands out, offering the most substantial contribution and significant growth potential. Over the past two decades, the Komax Group has made great progress in this segment and has taken another major step forward with the combination with Schleuniger in 2022. Today, the Komax Group offers comprehensive digital solutions for control cabinet builders that appeal to major players in the electrical products market. One of them is Siemens.

#### **Siemens – a global leader in technology**

Siemens Corporation is a US subsidiary of Siemens AG, a leading technology company focused on industry, infrastructure, transport, and healthcare. By combining the real and the digital worlds, Siemens empowers customers to accelerate their digitalization and sustainability transformations, making factories more agile and productive, buildings more efficient, power systems more intelligent, and transportation more sustainable.

#### **Solutions for the Siemens Smart Infrastructure manufacturing hub in Texas**

Siemens operates 24 manufacturing plants in the US, such as its electrical products manufacturing hub in Grand Prairie in the Dallas–Fort Worth area, Texas. Siemens has invested USD 650 million in new plants and factory expansions in the United States over the past few years, thereby successively implementing automation solutions from the Komax Group. The over 1 000-person plant manufactures power distribution equipment that supports essential power infrastructure in some of the country’s most critical installations, including data centers, industrial sites, and healthcare facilities. This equipment is fitted with immense wiring of very different types, and sizes, that needs to be processed in an increasingly automated way.

#### **OVERVIEW OF SIEMENS USA**

- 45 000 employees
- 24 manufacturing sites
- Active in all 50 US states and Puerto Rico

#### **SIEMENS IN GRAND PRAIRIE, TEXAS**

- Electrical products manufacturing hub
- 25 400-m<sup>2</sup>-site with 1 100 employees
- Zeta 650 and Omega 750 from Komax, and three Schleuniger MultiStrip 9480 process lines in use



Josh Robles, Automation Engineering Lead at Siemens Corporation, shows the Omega 750 at the Siemens site in Grand Prairie, Texas, USA.

### **From semi-automated to fully automated and digitalized manufacturing**

At the Grand Prairie site, Siemens had several Schleuniger and Komax cut & strip machines in use before 2019 to manufacture wiring for low-voltage switchgear in a semi-automated way. Driven by market demand, the location then sought to increase its efficiency in wire processing by further raising the level of automation. One of the first steps was a Zeta 650 harness manufacturing machine. Thanks to its eight process modules, the Zeta 650 can process up to 36 wires without changeover, from batch size 1 and just-in-time (▶ Zeta 650), which was a huge step forward.

While implementing the Zeta 650, the Siemens site also transitioned to a full digital twin of the wire set. This enables testing and validation in the virtual realm before production, accelerating engineering and production processes. With the digital twin established and its experience with the Zeta 650, the Grand Prairie team quickly committed to further conversion of its processing operations and the implementation of the Omega 750 with increased levels of automation. The Komax machines blend in perfectly as they

are fed directly with the manufacturing data from the digital twin and then cut, strip, terminate, label, and bundle the wire harness for the low-voltage switchgear application. This way Siemens created a seamless digitalized and automated manufacturing process, reducing waste, redundancies, and cost.

The Komax Group and Siemens worked closely together in the whole process with the Komax Group addressing the needs and thoughts of its customer with great care, including related service contracts. The close long-term relationship of the two partners paid off and led to a significantly increased level of automation at the Siemens site. Both partners are looking forward to a fruitful continuation in the future.

## Interview with Sidra Maryam, Plant Digitalization Manager, and Josh Robles, Automation Engineering Lead at Siemens Grand Prairie, Texas, USA.

### **Sidra, Josh, what are the biggest challenges in your business?**

Josh: The biggest challenge is leveraging fixed-point solutions for dynamic customer requirements at scale. Our team has done a great job of partnering with other internal Siemens teams and external partners like the Komax Group to push solutions to deliver beyond the intended use cases.

### **Why is it important for you to increase your level of automation in wire processing?**

Josh: We service the power distribution market, and one of the megatrends we are supporting is the next generation of transformation in how we live and do business – artificial intelligence (AI). It is important that – as our customers are scaling up and supporting the globe – we match their pace and can deliver high-quality, reliable power distribution systems faster than ever before.

Sidra: At Siemens, we pride ourselves on delivering high-quality products. With the increase in wiring complexity of our designs, it is critical that we have robust and error-proof production processes in place. Automation of wire processing allows us to eliminate quality issues and deliver at speed.

### **What were the drivers of the decision to implement Komax and Schleuniger machines, and what do you like most about our solutions?**

Josh: We started the wire automation journey with Schleuniger back in 2017, then stepped up the discussion with the Komax Group to harness manufacturing around 2019, and then again in 2022 for full harness assemblies. The core point of the discussion was how to drive the digital engineering thread as far as possible to a fully completed wire harness, which was well understood in our industry to be a tedious, time-consuming, and high-focus task. Additionally, customer requirements were driving more and more advanced components like sensors, PLCs, and HMIs into the products which require more

wiring. We only see this trend increasing, and with the engineer-to-order customer mix, there is not an easy way to standardize harness designs to meet a large swathe of customer requirements. We needed a solution that could execute thousands of different harness designs a day.

Sidra: The range of options offered by Komax and Schleuniger is comprehensive, so we can find everything we need with the same partner. It makes doing business easier and technology deployments faster.

### **How did the Komax Group help you in the process of implementing a digital twin and raising automation levels?**

Josh: Komax has been a great partner in helping us to fully understand how its machines operate on the software side of things. We had unique requirements that fell outside of Komax's usual use cases for wire list conversion. Configuration of all the machines required a lot of testing and validation and we felt fully supported on our integration journey.

### **You manufacture wiring for low-voltage switchgear with our machines. In what kind of buildings do these go?**

Josh: Our customer range is fairly wide – wherever power is needed to power a commercial building, factory, hospital, or data center, our products are a good fit. I can speak to the greater megatrend of AI requiring a lot of power, which in turn requires a lot more power distribution and monitoring solutions. Siemens has a great portfolio to meet customer requirements and demand.

### **What do you value most in the relationship with the Komax Group?**

Josh: Our engagement with the Komax Group has really been a great partnership – Komax has treated us like more than a customer buying equipment. Any time we have questions or concerns, we are able to connect with our dedicated regional account manager or application engineer.

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**Sidra Maryam, Plant Digitalization Manager at Siemens Grand Prairie, Texas, USA.**

More recently we were able to also elevate our partnership with Komax company contacts in Switzerland during a factory acceptance test, and the consistency in culture and delivery was a great experience.

Sidra: The people on both our teams share a passion for technological innovation. Komax’s wire processing industry expertise has helped us push our boundaries to reimagine how to build our products.

#### **How support you even better in future?**

Josh: Our automation roadmap will require deeper integration into Komax Group portfolio solutions. The goal of driving the full digital thread from customer requirement to fully delivered physical solutions requires completely integrating OEM equipment into our customized, high-end systems.

Sidra: More co-development and incorporating feedback into the roadmap of equipment enhancements would help us stay aligned with

the upcoming needs of both our businesses. As Josh mentioned, we need more and more integration across systems, and the current ecosystem could be improved to allow for more openness.

#### **How important is sustainability in your procurement decision process?**

Josh: Sustainability is the core of our value proposition. The adoption of all the wire processing solutions from Komax and Schleuniger has substantially reduced our copper scrap related to wire processing and installation in support of this journey.

Sidra: Sustainability is a global need, and it is an integral part of how we do business at Siemens. We have a clear framework for sustainability called DEGREE, which constitutes a 360-degree approach for all stakeholders. We use it to guide us through all processes of the product life cycle management, including procurement decisions.



Siemens Smart Infrastructure manufacturing hub, Grand Prairie, Texas, USA.