

# ri view

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Welcome to our world of SIMPLICITY

# When our customers grow, we grow

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### Welcome to Rimaster

Rimaster is a leading supplier of cable harnesses, electrical cabinets, electronics, and cabs for special vehicles and industrial systems.

We are a global group, whose origins and head office are in Rimforsa in Sweden. Rimaster today employs more than 1150 people across ten companies around the world. We have organizations for sales, design, development and production in Sweden, Poland, Belgium, France, Germany, China and Serbia.

Welcome to our world of Simplicity.

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During the last two years, Rimaster has experienced amazing growth. Today, the Rimaster group has approximately 1,150 employees. Our fastest growth has been in Poland, where this year alone we have expanded from approximately 600 to 750 employees. None of this would have been possible, of course, without our customers. Rimaster's strategy is to grow together with our customers by supporting them in their growth.

Therefore, we now choose to reinvest our success in increased capacity and availability at all of our facilities. We will also invest in a new production unit in Serbia, which we believe has an optimal geographic location with close proximity to our customers and strategically important logistics points. The region is also characterized by its high level of linguistic skills and good access to labor, which has made it possible to recruit new talent, a benefit that gets passed on to our customers.

The investments will make it possible to focus on our existing customers, while at the same time we have the opportunity to grow in a controlled manner alongside our new customers. Rimaster's increase in capacity covers all our markets — from Scandinavia to central Europe and China.

In China we have made significant investments in increased automation, and this work will continue. This has freed up capacity, making it possible for us to welcome new customers looking for manufacturing capacity in Asia. Proximity and simplicity will be the guiding principles as we continue to grow together.

Thank you for a fantastic year — we look forward to a new year of development in 2019 with our customers and colleagues! ◇◇◇

*Tomas Stålnert*  
CEO Rimaster Group



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# Innovative cooperation promotes greater growth

The world record in precision seed planting is held by the Swedish company Väderstad. Väderstad's innovative precision planter, Tempo, can quite simply run a little faster than all the others – and at the same, the seeds are pushed down with great precision. The Tempo machine has an electronic control unit that is designed and manufactured by Rimaster.



*Pontus Nordfeldt shows the so-called WS9 unit mounted in all Tempo and Spirit seed drills.*





Picture left: Power Shoot – a pressurized feeder system affording full control, all the way down to the soil.  
Picture right: Mounting the WS9 control unit.

Realizing such speed and high-level precision is no small matter. However, in modern agriculture, it is crucial for profitability and productivity. When Väderstad launched its Tempo planters, it revolutionized the industry. Tempo is a precision planter that delivers unprecedented precision at twice the speed of traditional precision planters. The result is a smooth appearance where the crop gets the best possible start.

"We believe that we have the market's best precision planters. And the fact is we have the world record in precision planting of corn: 502 hectares in 24 hours!" Väderstad's Systems & Components Manager Pontus Nordfeldt says with pride.

"Tempo is a very complex product the success of which is based on several factors. It includes an electronic control system and our innovative Power Shoot system, which is a pressurized delivery system that provides full control, seed for seed, all the way down into the earth."

#### Electronic Control System

One of the mainstays of the solutions in the Tempo concept is the electronic control unit that was developed and manufactured by Rimaster. The WS9 unit controls the output of the seed with great accuracy. The seed is distributed evenly spaced in rows, which is important for the crop and yield. When planting corn, for example, precision is crucial — if the seeds end up too close together, it impedes growth; if they are too spread out, it affects market potential and productivity.

The WS9 unit comes completely mounted from Rimaster, which also produces the input circuit boards. Rimaster also supplies the machines' input wiring and various types of molding in the control unit and critical parts of the seed motors.

"Our long-standing relationship with Rimaster, in which we receive both help with development and delivery of high-quality products, is valuable to us."

#### Väderstad's fast grower

It will soon be ten years since Rimaster's team developed the WS9 unit that has helped the Tempo family to grow and improve. Today, it is used in all models in the range of products that includes machines with up to 24 seed trays.

"We also apply the technology in our pneumatic seed drill concept, Spirit," says Pontus Nordfeldt, noting that cooperation with Rimaster for the Tempo machine has been very important.

"This project has been of major importance for our own capacity for innovation. Cooperation with Rimaster has been an important piece of the jigsaw for Väderstad's product portfolio."

This is an image that is also confirmed by Väderstad's Chairman of the Board, Christer Stark:

"Our long-standing relationship with Rimaster, in which we receive both help with development and delivery of high-quality products, is valuable to us." ◇◇◇





Rimaster grows. In turnover and numbers – but above all, in capacity. Large investments in all our manufacturing units allow us to offer a high level of availability in all markets. "We stand ready to move forward together with our customers," says Tomas Stålnert, CEO of Rimaster Group.



*Tomas Stålnert, CEO of Rimaster Group, believes in continued growth.*

# Rimaster invests in new availability

A completely new production plant in Serbia and a large warehouse in Poland, as well as extensive investments in production space, production layout, machinery, and development at our other units are all the results of the year's investments. Rimaster Group is investing a total of almost 40 MSEK in increased availability for existing and new customers. This is an indication of Rimaster's ambition to actively contribute to strengthening our customer's competitiveness.

"Investment makes it possible for us to deliver at the level and the quality required by customers — at the same time, we have the basis to further develop together with our customers in true Rimaster style. As a customer, you are assured that we have direct access to high levels of capacity and delivery assurance," says Stålnert, noting that by increasing its own competitiveness, Rimaster also strengthens its position as a stable and long-term partner.

## Reinvesting in capacity

Investments take place against the background of Rimaster's intensive growth during 2017 and 2018. In 2017 Rimaster increased its turnover by 30% — in comparison with the market growth of 10%. Tomas Stålnert

"Investment makes it possible for us to deliver at the level and the quality required by customers"

notes there are many reasons for this.

"Increased integration and more systems deliveries to our customers drives the need. Good economic activity has, of course, been of major importance. Our customers are growing and we have the confidence to follow along with them. At the same time, we have benefited from the restructuring that has taken place in the market. A number of suppliers have dropped out, which has given Rimaster exciting new opportunities."

## New production unit in Serbia

A strategically important part of the expansion is the investment in a new production plant in Serbia. The facility, which will cover 3,600 m<sup>2</sup>, will focus on the manufacture of wiring. The facility is under construction and is currently recruiting employees. Production is expected to start in the first

quarter of 2019.

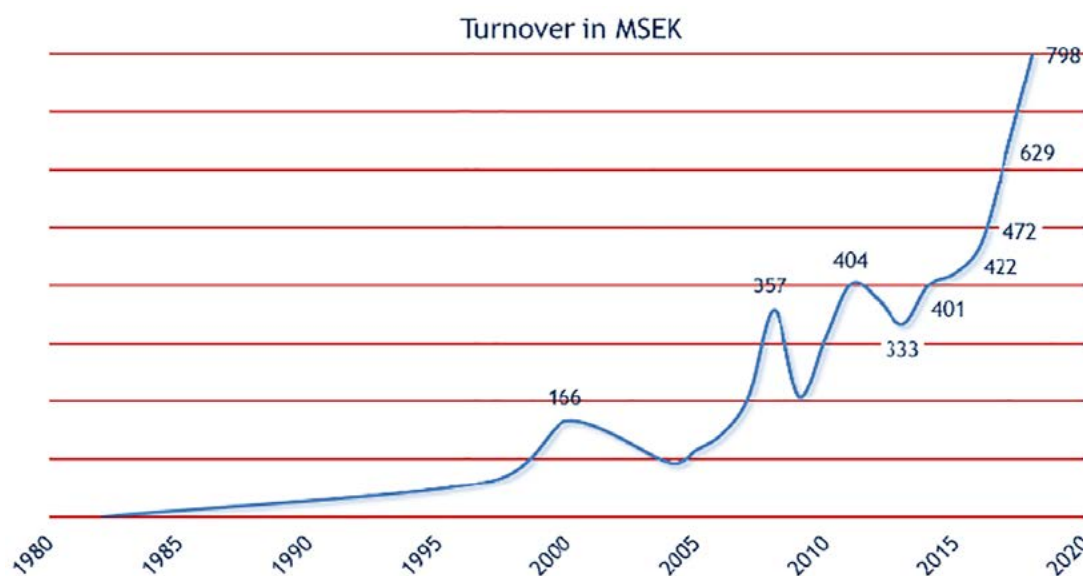
"Our establishment in Serbia is a part of the future capacity assurance, and we see that the region is competitive from multiple perspectives. It has good availability of skills and trained employees. Serbia also has a central location that is close to many of our customers and good logistics," says Stålnert.

## Technology drives the market

The increase in capacity that follows with the new investments is expected to be passed on to customers for a long period of time.

"We expect a stable and controlled growth of approximately 10% in the next few years. This will build upon the natural growth of the market, but we also believe that developments will be driven by new technology."

"Self-contained special vehicles and different types of hybrid solutions will require up to 20% more wiring. At the same time, control requirements are more advanced. We meet these with our focus on electronics and circuit board manufacturing. Another area that is becoming strong is our cab manufacturing, in which we are ready to take on new customers. We are firmly convinced that we, along with our customers, will continue to grow." ♦♦♦



*In 2017 Rimaster increased its turnover by 30%, in comparison with market growth of 10%. In the coming years, we expect a controlled growth of approximately 10% per year.*



# Rimaster Group is

## RIMASTER ELECTROSYSTEM RIMFORSA

**Production:** Sales, development, and production of electrical systems and battery cables.

**Investments:** Robot cell for crimping, automatic elevator for automated inventory management, and molding machine for molding of connectors.

**Total area:** 4,400 m<sup>2</sup>

**Number of employees:** 165

## RIMASTER SERBIA

**Production:** Production of electrical systems.

**Investments:** Completely new production plant, operations start in 2019.

**Total area:** 3,600 m<sup>2</sup>

**Estimated number of employees:** 16 (at start of operation)

## RIMASTER POLAND

**Production:** Production and sales of electrical systems. Manufacturing at two facilities in Borne Sulinowo and Czaplinek.

**Investments:** Building expansion and new production layout in Czaplinek. New automated warehouse and new production layout in Borne Sulinowo.

**Total area:** Czaplinek: 2,500 m<sup>2</sup>; Borne Sulinowo: 3,100 m<sup>2</sup>

**Number of employees:** 750



# growing globally

## RIMASTER CAB & MECHANICS, HORN

**Production:** Sales, development, and production of cabs and mechanics.

**Investments:** New factory layout with new assembly lines as well as a new office. Fully automated laser cutter and expanded welding capacity.

**Total area:** 2,700 m<sup>2</sup>

**Number of employees:** 33

## RIMASTER DEVELOPMENT, SÖDERHAMN

**Production:** Sales, development, and production of electrical systems and electronics.

**Investments:** Expansion and renovation of development, the office, and production. New selective solder jet increases capacity for circuit board manufacturing.

**Total area:** 3,500 m<sup>2</sup>

**Number of employees:** 66

## RIMASTER NINGBO

**Production:** Production and sales of electrical systems.

**Investments:** Conversion to automated production is complete and further investment is planned. Automation means a significant increase in availability for existing and new customers in Asia.

**Total area:** 3,800 m<sup>2</sup>

**Number of employees:** 124



**Rimaster Cab & Mechanics are investing heavily in new assembly lines, increased welding capacity, and a fully automated laser cutter.**

**"These efforts are sending important and positive signals both to customers and employees," says Operations Manager Pierre Vernersson.**



*Joakim Rulander and Pierre Vernersson inspect some cab detailing prior to delivery.*

# Rimaster builds cab industry of the future

Rimaster Cab & Mechanics in Horn is experiencing a great demand for cabs and has doubled volumes in a short period of time. At the same time, we see a need for further increase in capacity in the future, and that is why the Horn facility is currently undergoing a radical restructuring.

The result is equipment with advanced technological and skilled capability that provides strong competitiveness in the cab-building sector.

"We have completely rebuilt the assembly hall and also refitted 11 assembly locations with new equipment and material storage. The assembly locations are connected to our production and business systems so that the installers can quickly retrieve necessary information and report back to the system. The changes will increase our capacity at the same time as we invest in our quality work," Vernersson explains.

## **Fully automated laser cutting**

The facility has also invested in increased

*"It is important for us to be able to attract and retain skilled employees!"*

welding capabilities and, of course, the big news: a new, fully automated laser cutter that will be deployed at the beginning of 2019.

"The machine, which can be run 24/7, has a built-in tray and a robotic picking arm for sorting. It will increase both our capacity and flexibility with short lead times for the small- and medium-sized series that we work with. Quality will also be improved because we will avoid the cumbersome oxide layer. In addition, the machine uses only one-third as much energy as previously, which is important to us from the sustainability point of view," says Vernersson.

## **Attractive employer**

At the same time, offices and personnel

areas have been renovated — the results are spacious, light, and fresh.

"Our customers will certainly notice the increase in capacity. But for us, the investments are also important from an employee perspective. The effort sends the signal that Rimaster Cab & Mechanics is a great place to work, offering exciting development opportunities and the opportunity to work with the latest technology. It is important for us to be able to attract and retain skilled employees!" ◇◇◇



*Pierre Vernersson, Operations Manager, Rimaster.*





Rimaster Development in Söderhamn builds new facilities for production and development. "The aim is to create more efficient flows and increase the capacity to improve our overall offer to the customer," says Project Manager Therese Ekengren.

*Eyla Bozan and Maja Henriksen with the new selective soldering machine.*

# Rimaster Development expands

In all, new facilities covering about 700 m<sup>2</sup> are being built adjacent to Rimaster Development's existing premises. The measure will support Rimaster Development's commitment as a comprehensive electrical system supplier to its customers — from development to manufacturing of cabling and electronics.

"Our intention is to create even better flows so we can increase future productivity and enhance quality. Development, design, and administration will also have room to grow," states Ekengren.

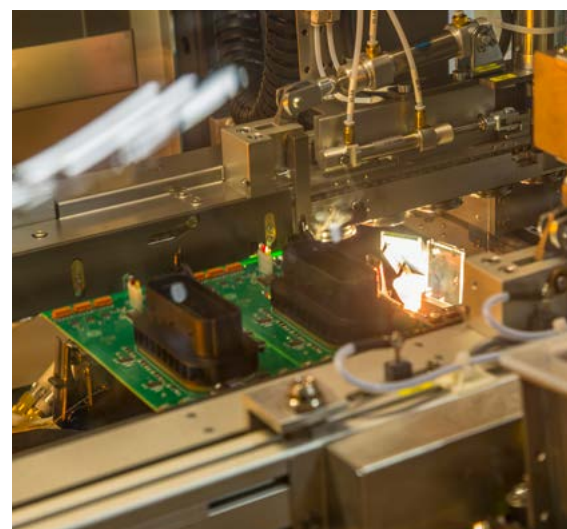
At the same time, new investments are being made in advanced machinery, including a selective solder jet which will increase the capacity of the plant within the field of printed circuit boards.

"Ultimately, we will also invest further in new, efficient inventory solutions and flows.

Together with previous and ongoing investments, we will take a holistic approach and take all areas into account — from inventory to the production areas and office." ♦♦♦



*Therese Ekengren, Project Manager, Rimaster*



*The new selective soldering machine has significantly higher capacity than previously.*



*The construction of new production areas and offices is in full swing.*



# Huddig breaks new ground with a full hybrid

After many years of cooperation, Huddig and Rimaster step into the hybrid era together. Huddig's new Tigon Technology is revolutionary in the construction industry.

"What makes Tigon so special is that it is the first construction machine with full hybrid technology," says Fredrik Forsberg, a development engineer at Huddig.

Full hybrid technology, which combines diesel and electric power, generates and regenerates energy in a completely new way for construction machinery.

— As a driver, you can decide to run on diesel, electric, or a combination of both — this is a flexibility that no other market today can offer. It has several benefits in terms of higher performance and lower fuel consumption.

In fact, the Tigon is able to provide 30% more power than the diesel engine alone can actually produce. Traction is better and the machine runs quieter — in addition, it has a superior environmental performance.

## Complex development

The first concept machine was presented in 2015 and aroused considerable interest on the market. The development of the first prototype has been carried in close cooperation with the development engineers at Rimaster in Söderhamn and work is currently under way with the second and third prototypes for the forthcoming series production. Rimaster is responsible for the entire electrical system with circuit and wiring diagrams. Fredrik Larsson, a Rimaster development engineer who has been on-site with Huddig, explained that control systems and software were developed by Huddig; however, the

"There is a closeness, both in geographic proximity and in cooperation, that we appreciate"

project's complexity has resulted in close communication in all areas. Fredrik and his colleague Erik Hedström acted as dedicated consultants to the project.

"Combining two completely different systems in this way is advanced. Not just in purely technical terms but also in terms of space. There is a lot that has to be incorporated in there, and I think we succeeded!"

## Growing together

Huddig and Rimaster have many years of cooperation behind them, and they have developed and grown together, both in skills and in sales.

This long history together is, of course, what facilitates innovative development of this magnitude, states Huddig's Fredrik Forsberg.

"Rimaster is, of course, 'our' electrical system supplier and we have done a lot together — so, there was no question that we would work together on this project."

This time there wasn't any existing machine to start with, but Rimaster delivered entirely new proposals directly in 3D CAD.

"There is a closeness, both in geographic proximity and in cooperation, that we appreciate. Rimaster knows our business. They are

good at what they do and it is a reassurance to know what we are getting from them."

## Customers queuing up

For Huddig's part, it is a success story. Anticipating the forthcoming series production, many customers have already signed up to the waiting list. Fredrik Forsberg believes this is due to the organization having informed customers with a pronounced environmental awareness.

"Among customers and their employers, there is a great deal of interest concerning sustainability issues, and from the environmental point of view, full hybrid technology is certainly extremely interesting. We also have several customers who think there is a great advantage in avoiding the use of diesel in connection with, for example, tunnel works, since this means a better working environment for employees. It is therefore easy to see that many of our customers really enjoy innovative technology. They simply want to be at the forefront!" ♦♦♦



Fredrik Forsberg, Huddig



Fredrik Larsson, Rimaster



## How Tigon Technology works

Tigon is a full hybrid technology with both diesel and electric power. The diesel engine operates three electric motor generators (EMG), which in turn drive the pumps for working hydraulics. The EMGs can charge a lithium ion battery, if necessary. In another operating situation, the EMGs can, with help from the diesel motor's action and additional power from the battery, deliver a higher output than the diesel engine generates on its own. The energy from the diesel engine and/or battery can be used, optionally via a charging socket, in any way for working hydraulics or propulsion. The working hydraulics as propulsion can be operated only with electrical power. The EMG's efficiency is substantially greater than in a conventional mechanical drive train, and since the EMGs are connected directly to the wheels for propulsion via hub reductions, losses are minimal.





*Tomas Berg to the left  
and Roger Svensson.*

# Rimaster's test platform provides unique benefits in quality

Rimaster Test Platform is Rimaster's own test system – developed in-house and thus unique in the industry. "Rimaster Test Platform provides us with superior capacity in quality controls. With this platform we can effectively perform advanced and standardized quality tests on all we deliver to our customers," says Test Manager Tomas Berg.

For more than a decade, Rimaster's advanced functional tests have been conducted by a proprietary test platform. Rimaster Test Platform (RTP) was developed by Rimaster Electrosystem in Rimforsa and is now used to test electrical systems with active

components such as relays, switches, and indicators that are often mounted in, for example, instrument panels. This is done in all manufacturing units, with the exception of Rimaster Cab & Mechanics in Horn. Rimaster China has also further developed its own variant of the system (RCTP) for the testing of high voltage, 400 and 1,000 volts.

## Customer sets the requirements

"With RTP, we will be given the opportunity to perform functional tests without needing to develop specific test equipment for each part. Testing can also be done in a standardized way, regardless of where the production takes place," says Tomas Berg, Test Manager at Rimaster Electrosystem in Rimforsa.

The test platform is based on a design that Tomas likens to a large wardrobe, which is in turn connected to the electrical system to be tested. In total, the system can be connected to up to 900 different items

that are exposed to a voltage of 24 volts.

Each part has its own test instruction developed in cooperation with the customer according to the product specification. The test instruction describes how the connection is to be made and which tests are to be conducted in order for the device to be approved prior to delivery.

"The tests can be programmed for new features, which makes it easy to match the quality controls in line with the customer's product development. So, it is easy to keep up with technological developments," says Tomas.

## Everything is tested

All panels and complex wiring are tested with RTP. For all smaller and simpler wiring, a cable scan test is performed to check diodes, capacitors, resistors, and contacts.

"From a customer perspective it is important for us to have the capacity to ensure full quality for what we deliver." ♦♦♦





*Investment in the new high capacity warehouse in Borne Sulinowo. Dariusz Hudanec and Patrycja Heib, project managers.*

# Rimaster Poland ramps up capacity with new production and storage solutions

Rimaster's Polish sites has undergone some radical changes during 2018. In Borne Sulinowo we've installed a new automatized high bay storage that will increase efficiency and free valuable production area. In Czaplinek, a brand new production layout will help ramp up future capacity.

The automatized high bay storage in Borne Sulinowo is designed to support Rimaster's unique "High Mix, Low Volume"-concept.

"The automatic storage includes six stand-alone machines where each of them is 11 meters high and contains 85 shelves on each level. Materials will be stored in cardboard trays. This will allow us to greatly improve the efficiency of our storage, decreasing the use of space by four times, explains Warehouse Coordinator Dariusz Hudanec.

## Increased capacity

The solution contains a Compact Twin double lift system and a custom made "Put to Light" picking system introduced in cooperation between Rimaster and Compact Twin.

"The system allows us to optimize the

material handling and picking process. We will be able to collect over a dozen manufacturing orders at the same time. That solution significantly improves collecting time, supporting our 'High Mix-Low Volume'-concept", states Dariusz Hudanec.

"We are positive that this investment will strengthen our position in the market as a innovative and solution-oriented business and that it will support our, and our customers', future growth."

The new storage solution opens up for other improvements as well. The recovered surfaces will be used for production, tells Patrycja Heib, assistant to managing director.

"From a customer perspective, it means that we now have the possibility to produce more articles and we will be able to start new production as well. For us, this is also an important investment in our employer brand as we are offering our employees modern and efficient work solutions."

## New assembly in Czaplinek

In Czaplinek, the production facility has been reinforced with brand new assembly tables. The investment will support quality and productivity, giving the opportunity to effective space management, says Quality Manager Piotr Gawróński.

"The new assembly tables will facilitate

finding different materials and make operations faster, increasing capacity, productivity and delivered quality, making Rimaster an even better partner to our customers. We will also have the possibility to increase the standardization of the assembly operation – and to handle tooling, documentation and materials – in a professional way." ◇◇◇



*Piotr Gawróński*



*Investment in factory layout and new assembly tables in Czaplinek. Piotr Gawróński, Project Manager.*



# RiCab on tour was a success — now we welcome new customers



*During the course of the Europe tour, great interest was shown in the RiCab system concept, where customisation is standard.*

Can we test drive? Absolutely! During the summer, Rimaster's in-house developed cab, RiCab, has been out on a European tour and many potential customers took the opportunity to try out the new concept. At the same time, production in Horn is ready to take on new customers.

Rimaster's in-house developed RiCab—the version that has been developed for special vehicles in the agricultural sector—has been on tour in Europe. The tour made a number

of stops with potential customers who had the opportunity to examine and try out the cab under the guidance of Rimaster Cab & Mechanics CEO Claes Hull and representatives from Rimaster's local sales companies.

"The reception has been very positive. There is a great deal of interest in our system concept with the possibility of customizing the cabs in a rational method for specific industry and customer requests," Hull explains.

Many customers took advantage of the chance to experience the RiCab on site and were also curious about Rimaster's unique solutions — including the intelligent control and monitoring RiFuse unit. The RiCab tour, which continues later this fall, has led to many new and exciting contacts

that have come just at the right time.

"We have carried out several large investments at our manufacturing facility in Horn, which means that we are now ready to receive new customers." ♦♦♦



*Claes Hull, CEO, Rimaster Cab & Mechanics*

*Rimaster is a leading supplier of cable harnesses, electrical cabinets, electronics, and cabs for special vehicles and industrial systems.*



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