



CZECH REPUBLIC

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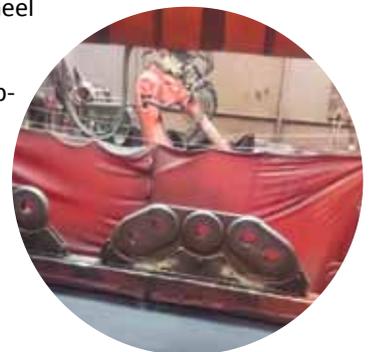
Valk Welding robots to weld parts of 'New York Wheel'

Early 2016 the fabrication of the "New York Wheel", the world's largest observation wheel is started. It will rise up on St. George, Staten Island, and is expected to attract 3.5 million visitors annually.

The 'New York Wheel' project is a so called EPC project and built under management of the joint venture Mammoet Starneth LLC. The construction and transport of the wheel components will be coordinated by Mammoet USA.



Huisman is one of the suppliers and will deliver the hub-spindle, braces, drive towers, the rigid spokes, and the assembly frame for the rigid spokes.



At its Czech branch, Huisman Konstrukce s.r.o., the hub and rim connections and the 11-metre-long spokes are produced. It will use welding robots from Valk Welding for welding pre-assemblies.

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Huisman Konstrukce s.r.o. produces subassemblies for 'New York Wheel'



Huisman develops and builds heavy construction equipment for the onshore and offshore market and the leisure industry. Huisman's Czech branch is mainly used for building sub-assemblies for pipe-laying systems and complete cranes, which are assembled on ships by Huisman in Schiedam. Because of its price and broad knowledge and experience in welding steel S690 for heavy constructions, and also because of the trust Mammoet puts into the company, Huisman is one of the most important suppliers for this project.

Temporary spoke structures

The temporary spokes (rigid spokes) consist of compound sheeting and pipe structures, which are welded in 11-metre sections and coated, after which they are shipped to New York. There, at the Marshalling Yard, the individual spoke sections will be assembled and will support the construction of the wheel. Once the wheel structure has been completed, the temporary spokes will be replaced by steel cables. The production of all the main and secondary steelwork for the New York Wheel will keep Huisman busy for over six months.

Valk Welding robots weld and cut

Huisman Konstrukce s.r.o. has two Valk Welding welding robots and a plasma cutting robot for cutting welding edges in thick sheet material. Over the past four years the company has considerably extended its knowledge and experience of robot welding, supported by training courses at Valk Welding CZ.

The Dutch Head of Quality Control and Welding Coordinator, Mat Pustjens, regularly shares his experiences with Valk Welding. "Together we maintain staff knowledge of software at the highest level, so that we can also make the most of the latest software options.

High complexity in very thick sheets

Mat Pustjens: "The parts for the spokes are welded with the robot by means of MAG welding, with different filled wires in several A4 to A7 layers. We also process products for other customers with different complexities from sketch to end product. We program this in DTPS (offline programming and simulation software) whenever possible. For buttwelds from 40 to 100 mm, which are sometimes welded in as many as 120 layers, we use ThickPlate software, a plug-in in DTPS. Processing such heavy structures is where much of our expertise lies. With the welding robots we have better control of the heat application than is the case with manual welding, so we achieve a better quality and a higher efficiency rate, which also means less post-processing work."

www.huismanequipment.com

A Dutch affair

After the world-wide tendering for the wheel components, various contractors have been selected, the majority of which are from The Netherlands: The 36 capsules are built by four VDL companies, and Huisman supplies most of the constructive steelwork. Tecmacom is supplying the spoke cables, Philips provides the LED lighting, and IHC delivers the push-pull unit for the installation. Mammoet, Starneth, Huisman, VDL Groep, Philips, Tecmacom and IHC are all Dutch companies.



Big Wheel for the big apple

- New York Wheel is the tallest observation wheel in the world and tops out at 630 feet (192 m) high. This is the overall height; the diameter of the wheel is 600 feet (183 m)
- Propulsion 32 friction wheels mounted to electrical drive motors placed in 4 independent drive towers.
- In total Mammoet will be erecting 10,000 tons of steel.
- The wheel will feature 36 iconic pods, each of which can carry up to 40 people.

www.newyorkwheel.com



Wire + Arc Additive Manufacturing (WAAM)



RAMLAB sees big potential in 3D printing with welding robots

There is a pressing demand for quickly available replacement parts in the seaport sector. This forces suppliers to keep parts in stock for years, with the risk that they will never be sold. On-demand production would be the best solution, but the delivery time for large parts is usually a few weeks to - in some cases - several months. The RAMLAB (Rotterdam Additive Manufacturing Lab) therefore sees great potential in 3D printing with welding robots (WAAM), and a start was made this year with a fieldlab for 3D metal printing with welding robots. Valk Welding has supplied two welding robot systems for this purpose and also sees great potential for the use of this system among its own customers.

Vincent Wegener, managing director of RAMLAB: "Existing 3D metal printers are limited to the maximum dimensions of the biggest system and involve high powder costs. But welding robots are able to weld 1 to several kilos of material an hour using standard welding wire. That makes it possible to produce large parts with lower prices and in less time. At the RAMLAB we are now looking into the possibilities of this in close cooperation with strategic partners such as Valk Welding and Air Liquide and seaport-related companies in the Rotterdam region. Huisman and IHC were the first to join in."

Ship's propeller

One of the first parts that was successfully printed using this method was a double-curved part inspired on a ship's propeller. Vincent Wegener: "A part like this would normally be machined and finished from a casting. Delivering the casting alone would take weeks to a few months because this is a single item that will usually have to come from abroad. Using the welding robot we made it within a few hours and all that had to be done was to grind and polish it."

Quality guaranteed

According to Vincent Wegener the quality of castings is not always guaranteed. "But it is with robot welding! Valk Welding robots generate the data needed to



provide an insight into the weld quality. You can pass this on to the customer for reference."

Hooking up

Vincent Wegener: "We've already done the preliminary work and supplied the necessary files for a large crane hook that Huisman will be printing with its Valk Welding robots at its Czech plant. Huisman is one of the partners that recognises the big potential of 3D metal printing with welding robots and is planning to investigate and adapt the latest production developments at an early stage. All of the partners are providing information about their requirements and experiences so that we can back each other up in this process. Several companies in the maritime and offshore sector will of course be able to hook up with the RAMLAB."



About RAMLAB

RAMLAB is established in the Innovation Dock at RDM in Rotterdam which is in the Rotterdam Seaport area where companies, researchers and students work together on giving shape to the new production industry. The parties are jointly working on a pilot project for the 3D printing of spare parts for the maritime industry. Fieldlab RAMLAB is a follow-up from a previous pilot for the production of spare parts of ships using 3D printing technologies.

www.ramlab.eu



Huisman doing tests with 3D welding

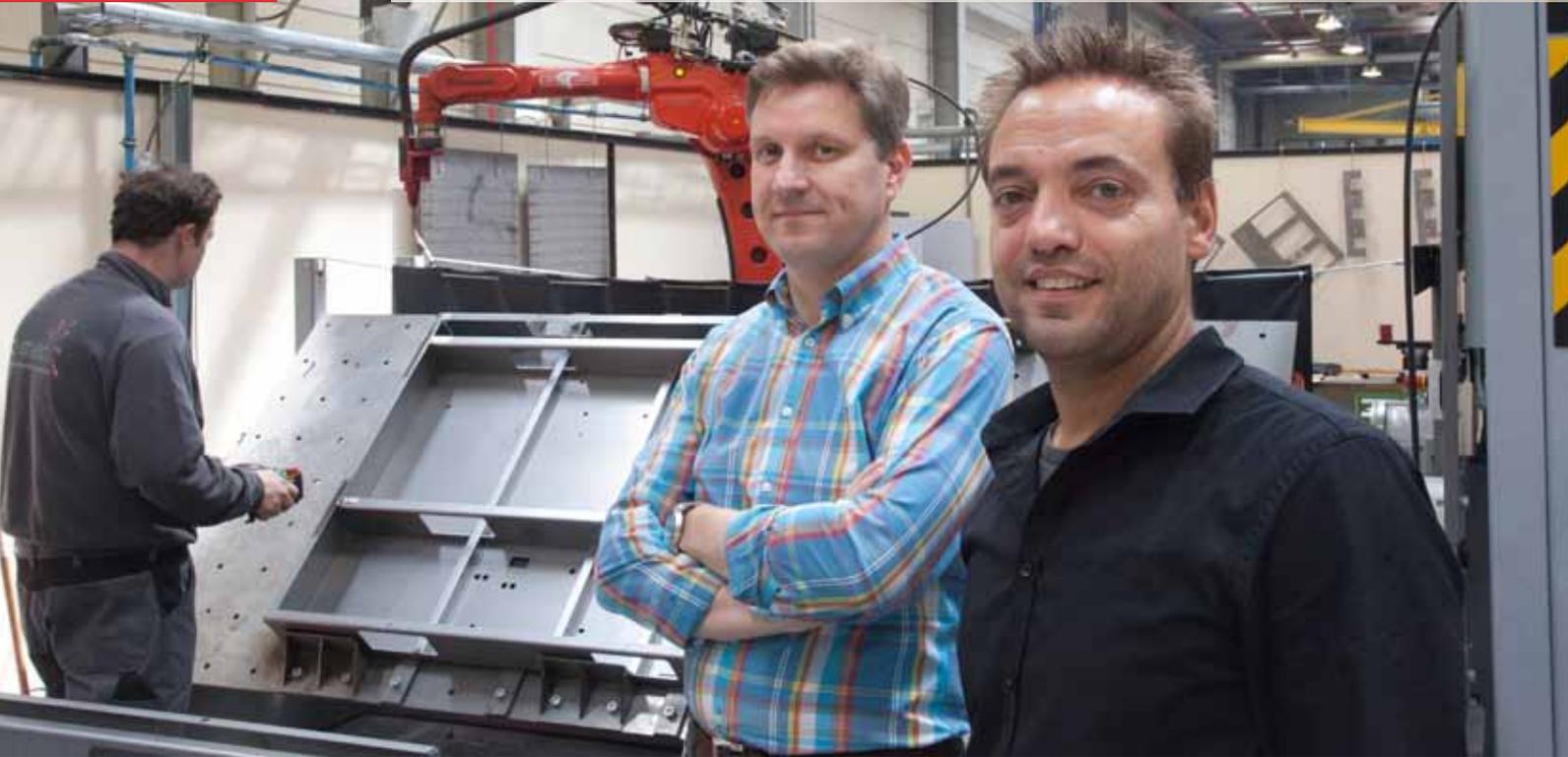
Huisman has already gained a lot of experience of 3D (WAAM) welding with the welding robot. Mat Pustjens: "Our plan is to weld a complete hook for a crane in 3D layer by layer with the welding robot, and then mill it afterwards. In preparation for this, we have first of all experimented with 3D welding of a number of thick-walled

pipes, which we have subjected to both DT and NDT. We have established the correct parameters and looked for a good weld additive in combination with the gas mixtures. We hope that we can 'print' the hook with the welding robot before the end of this year, and fully test it."



BELGIUM

Switching to 2 welding robots in 3 shifts



The change from being a production company to continuously independent as a self supporting supplier put C-MEC in Kortrijk, Belgium, on the move to takeover other companies. Where welding used to be a secondary activity, it underwent explosive growth following the takeover of the sub contractors Steelandt and Deprez. C-MEC decided to invest in several welding robots in order to increase capacity and reduce changeover times. But things went less smoothly than planned. "We seriously underestimated the impact of the new technology. Operations manager Tom Vandewoestijne soon discovered that the switch from manual welding to welding robots wasn't as simple as it looked. The welding robot is currently operating in one shift. "But that will change to 2 welding robots in 3 shifts."

*Operational manager
Tom Vandewoestijne (m)
and Production supervisor
Krist Bleuzé (r)*



General sub-contractor C-MEC, employing 100 people in Belgium and another 100 in the Czech Republic, specialises in sheet metal processing, machining, coating and assembly. The products are mostly fine-mechanical components with small dimensions for electronic equipment and sub-assemblies for media, digital cinema, defense, aviation and the medical sector. Following the takeover of the two sub-contractors the range was considerably broadened and the dimensions increased substantially. The processes at C-MEC are largely automated. "What we can't automate we leave to our Czech location", explains production supervisor Krist Bleuzé. C-MEC therefore has the latest, fully automated lasers, punch/laser combinations, press-brakes, turning and milling centers, powder coating lines, and so on. "Until recently we were only doing the welding manually. But the shortage of professional welders soon left us facing capacity problems."

Step to welding robotisation

There were a number of products that lent themselves better to robot welding. This was a good match for the company's approach to automation and was intended to save a great deal of time. The

idea was to have 2 welding robots up and running within a year. For this purpose C-MEC sent a number of products to 3 robot integrators and invited them to demonstrate their systems. Krist Bleuzé: "Valk Welding is a known name in the welding industry. The company has a lot of knowledge and experience in welding robotisation, supplies a complete system and offers an outstanding support service. Their demo and both the welding robot and offline programming system, turned out to be the most convincing."

Learning and development process

Tom Vandewoestijne: "We took the first step last year, even though we realised that welding with a robot is a 3D process and therefore much more complicated than 2D laser cutting and punching, and we did not yet have any experience with robot welding. Our ultimate goal was to introduce the use of 2 welding robots in 3 shifts in stages. That plan turned out to be overambitious. We seriously underestimated the impact of the new technology. We didn't put enough time into this. We've now been using the first welding robot for a year, and are reliably welding repeat orders for several customers without any difficulties. We regard that as a learning and development process."

Automatic tungsten and wire replacement



For the time being we're restricting ourselves to steel and are currently redesigning other products to make them suitable for the welding robot. We won't be ready for another welding robot until we've gained enough experience."

30% Production gain

Krist Bleuzé: "Despite the new growth forecasts, the results up to now are meeting all expectations. As well as a 30% production gain we are also achieving higher and more consistent quality. We can't use the welding robot for all of our products just like that. In some cases the series are too small, or the pieces are unsuitable. But we're still doing our utmost and trying everything we can. This is always done in consultation with the customer, because sometimes the piece has to be adjusted. One thing that isn't in any doubt is the weld quality: it's perfect."

Optimisation

The work on the welding robot is evaluated every day at C-MEC in order to find ways of improving the process. Krist Bleuzé: "It turned out in practice that we needed half the time for weld tracking. Supplying pieces more accurately saves time on tracking. We've also learned that welding jigs can be made more smartly, in such a way that products can be loaded and unloaded more quickly." We're focusing not so much on the welding process itself but more on its preparation.

Scale size

Hundreds of orders go through the company's production process, most of which is unmanned. Tom Vandewoestijne: "With this number of orders we are able to use our production capacity profitably and produce more effectively and quickly than a brand supplier or manufacturer. Manufacturers therefore focus more and more on marketing and development, and outsource the production. Since we do all of the processes in-house, our delivery times are highly competitive. Welding robotisation has helped us to reduce the turnaround times even more. That has enabled us to attract new orders that we couldn't have taken on without the welding robot."

www.c-mec.be

In addition to the Torch Exchange System (TES) and the quick-exchange cable package VWPR-QE (Quick Exchange) for the use with the Panasonic robots in Valk Welding robot systems, the development of the Wire Exchange System (WES) and the Tungsten Electrode Exchange System (TEES) for TIG welding has now been completed.

With this, our welding robot systems can change the torch (goose neck), torch shape, tungsten electrode, the welding wire and welding wire type as well as the diameter without the operator being involved. As a result, it is possible to switch between the MIG and TIG welding process when required and from solid to flux-cored wire. The only limitation is that the automatic wire switchover must occur within the same diameter. However, the switch to a different diameter is possible in combination with the automatic torch replacement.

Tungsten Electrode Exchange

The Tungsten Electrode Exchange System (TEES) plays an important part in TIG welding with the robot. In order to prevent risks in regard to the quality of the TIG welding process, which is already quite critical on its own, and to maintain the welding quality at a high level, it is required that the tungsten electrode is replaced as a precautionary measure. Until now, tungsten electrodes were replaced by hand when they had become worn and used. Sander Verhoef of Valk Welding, who developed the



system, explains: "Although automatic torch, wire and tungsten replacement was initially developed to enable a process suitable for a reduced workforce, the operator in particular is relieved. As a result of including the automatic exchange in the programming, the risk is eliminated that the operator can forget to replace the tungsten electrode, which would have a negative impact on the quality of the welding work."

By now, the Torch Exchange System (TES) is also used by customers with cycle times of longer than 4 hours, preventing that they weld with a worn conductor. For this, the entire torch neck including a 'fresh' wire tip is replaced.

Keeping the long cables of the teach pendant secured

Operators that control and /or program the robot with a teach pendant are familiar with the problem of long cables that lie around. For this reason a useful tool is developed that automatically retracts the cable after using the teach pendant.

The Multi Teach Pendant Reel (MTPReel) is an innovative solution that prevents both the damaging of the cable and eliminates the tripping hazard. By automatically retracting the cable after use, loosely lying cables will never obstruct your work environment again. This will keep the work environment safe and tidy.

- Stable, impact-resistant plastic housing
- Automatic retraction movement can be adjusted in increments of 50 cm



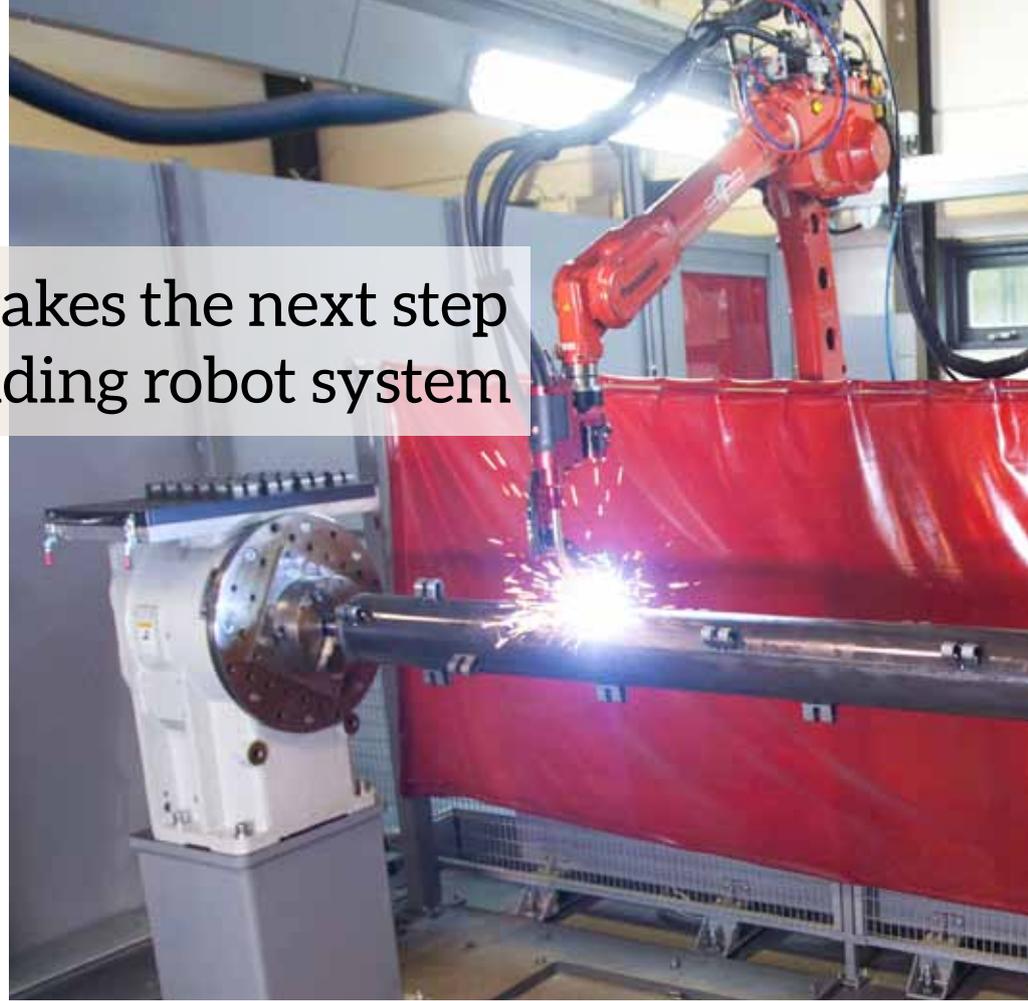


NETHERLANDS

Korte Friesland takes the next step with its new welding robot system

The Dutch supplier Korte Friesland does precision welding in a quality which in some cases is barely achievable manually. Despite the many modifications, they were unable to achieve the required precision with their previous welding robot. For that reason a Valk Welding robot system with offline programming had been at the top of their wish list for some time. The supplier now has a universally usable welding robot system that both positions the components and welds them with the required level of precision.

Top quality welding and the precise machining of large parts are what the professionals at Korte Friesland do best. As well as tooling for Aerospace the supplier also works for OEMs in the agricultural sector, machinery manufacturers and the simulator industry. They confidentially leave the production of their frames and critical parts for their machines to this Frisian supplier. "With a reliability of supply above 95% and a maximum of 0.4% rejection we are now supplying 3-metre rotors for grass mowers with a tolerance within 1 mm. It is only because of our investment in this Valk Welding robot system that we are able to achieve this precision and quality", says owner Henk Korte.



Certified welding

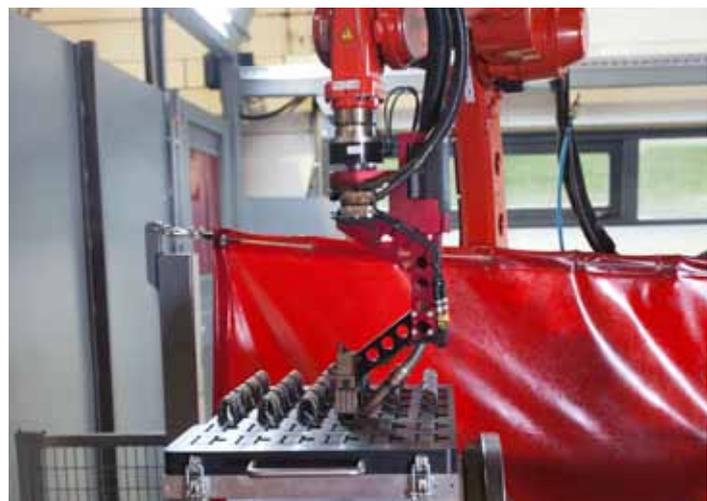
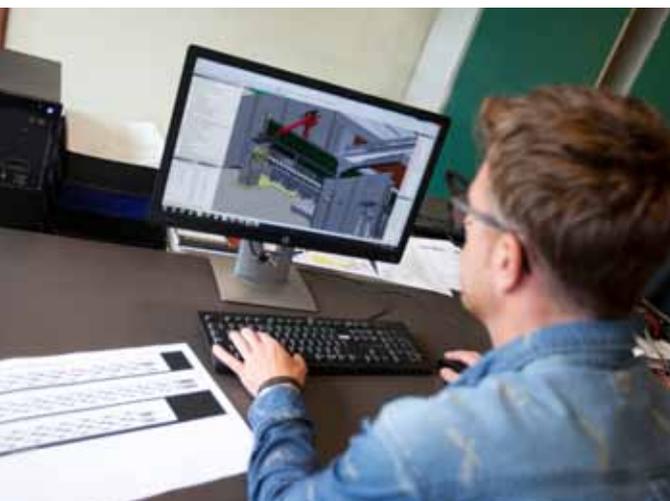
Korte Friesland has shown with its quality assurance certificate ISO 3834-2 that it is able to meet the strictest welding requirements. "Our experienced welders are happy to take on complex orders. The internal training plan and the certification of our welders result in consistently high welding quality, says company manager Samuel Oberman. Oberman is an International Welding Specialist and is responsible both for the welding process and the quality assurance aspect. "All of the welders and materials are certified and registered in the manufacturing manual. This makes it possible for us to trace who made the weld. The next step is to also certify the welding robot. Registrating the settings and the conditions

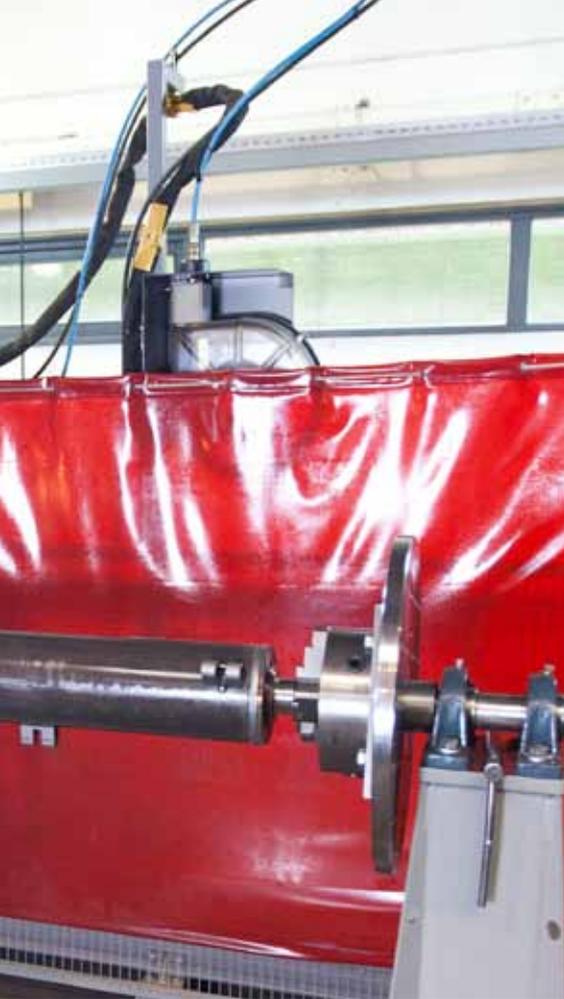
makes it possible to predict the quality of the weld. Getting this data in correct format makes it possible to attract new business", explains Oberman.

Universally deployable welding robot system

Although the welding robot system is now used mainly for the production of the rotors, the system is suitable for a wide range of products with a length up to 9m.

For this purpose Korte Friesland has made its own mobile welding fume extraction system and the fixed screen. The Panasonic TL-2000WG3 on a track now serves 2 separate jig supports with a length of 4 metres. "Removing the middle section and relocating the posi-





Samuel Oberman: "More than 95% reliability of supply and a maximum of 0.4% rejection"



tioners makes it possible for us to weld longer components. We also have 2 jig supports at the back for small products. This makes the system very flexible, which places it perfectly in line with our machinery for metalworking", says Samuel Oberman.

Offline was an important requirement

Henk Korte: "We started by looking into how a number of colleague companies tackled welding robotisation. Valk Welding's robots with offline programme appealed to us the most. DTPS is more than just a programming system: we also use it to design our welding jigs and to plan the welding jobs. With our other welding robot we often had to spend a couple of days on program-



ming a complex product online. The welding robot had to be taken out of operation during that time. With the Valk Welding robot system we not only achieve the required precision, but also gain a lot of time."

Gripper system

Korte Friesland uses the welding robot for several rotor types. For one of them 128 mounting brackets have to be welded around a 3m tube. Valk Welding has developed a gripper system that is situated next to the welding torch. Each bracket is taken off a shelf and held at the pre-programmed position on the shaft so that the robot can attach it. Samuel Oberman: "Because of the heat distribution aspect, the welding order is very important to remaining within the runout. The sequence is laid down in DTPS, for which we have divided the rotor into small sections that are welded alternately. It is only barely possible to organise that division manually."

Wire searching

For another type of rotor corner lines are welded to the tube with 345 small welds. As well as the welding order, finding the welding position of the corner lines is a vital aspect of the welding process with the welding robot. For this purpose use is made of the Quick Touch wire search system that Valk Welding has integrated in DTPS. The robot relocates the 3 to 4 corner lines. Wire searching is based on the gas nozzle searching system, but uses the welding wire rather than the gas nozzle as the 'sensor'. The big advantage of this wire search method is that it is not only possible to detect all weld forms: access is improved to areas that are difficult to reach and the detection works with both thin and thick plates.

Turnover secured

By investing in the welding robot system Korte Friesland has secured an important part of its turnover. "The products are now in line with the requested specifications and we have also been able to substantially step up our productivity. We used to weld 5 to 6 rotors a day, but this has now risen to 8 a day. And the next orders for the welding robot are already in the pipeline", concludes Henk Korte.

www.kortefriesland.nl





CZECH REPUBLIC



Lack of skilled welders forced BAST to extend robotic welding

More and more companies are facing capacity problems due to a shortage of skilled welders. This problem is also affecting Eastern European companies. BAST s.r.o., a large Czech supplier for the railway sector, has therefore decided to invest in robot welding. "This not only solves the problem caused by the lack of professional welders, but also improves the welding quality and the general efficiency of the production process", explains co-owner Miroslav Bazala. Valk Welding delivered two arc welding robots that are mounted on a gantry structure and serve three work stations over an 18 m track.



Miroslav Bazala: "The Czech branch of Valk Welding has trained our people to a very high professional level"



BAST manufactures cabin sections, door-frames and parts, frames, brake systems, coverings for air conditioning systems and switchboards, voltage converters, security components, battery compartments and other articles for rail vehicles. Its clients include well-known manufacturers such as Siemens, Alstom, Bombardier and Knorr-Bremse. Over 230 people work in two and or three shifts in a production area of 24,000 m². For the processing of stainless steel and aluminium the company has an extensive CNC machinery plant for plate processing, welding and coating, in which MAG, MIG, TIG, laser welding and resistance spot welding are used.

2 Welding robots serving 3 work stations

"In the call for tenders in the spring of 2014 we chose Valk Welding as our robot integrator for their comprehensive knowledge and experience in the area of robot welding and their solutions for small series productions that result in high productivity and profitability", explains Miroslav Bazala.

Valk Welding delivered a comprehensive system consisting of two Panasonic TA-1900WGH3 welding robots mounted on a gantry structure serving 3 work stations. Both welding robots move on an 18-metre track for that purpose.

The first work station, with a load capacity of 6,000 kg, is intended for single axis positioning and is therefore equipped with a positioner. The center work station is equipped with a two-axis drop center positioner with a 1,500 kg load capacity. A third work station is equipped with an indextable with two positions and has a load capacity of 250 kg for smaller parts. The 3 work stations are set up in such a way that it is possible to position and process virtually all of the products and parts that BAST produces for the railroad sector.

Offline programming to reduce downtime

All of BAST's products are programmed offline so that small series can be processed as efficiently as possible on the welding robots. "Offline programming from a PC rather than directly on the robot maximises the productivity of the entire welding process. The downtime is considerably reduced because there is no need to interrupt production for programming", explains Richard Mares of Valk Welding CZ s.r.o..

Arc-Eye laser tracking system

BAST supplies certified welding in conformity with EN 15085 and ISO 3834. To guarantee high welding quality BAST uses the Arc-Eye la-

ser tracking system. The Arc-Eye system makes a complete 3D scan of the weld, detects any deviations and guides the welding robot exactly along the weld. "Also, the ARC-Eye laser sensor is not sensitive to reflections in glossy materials such as aluminium and stainless steel", explains Richard Mares.

What has been achieved with the robots?

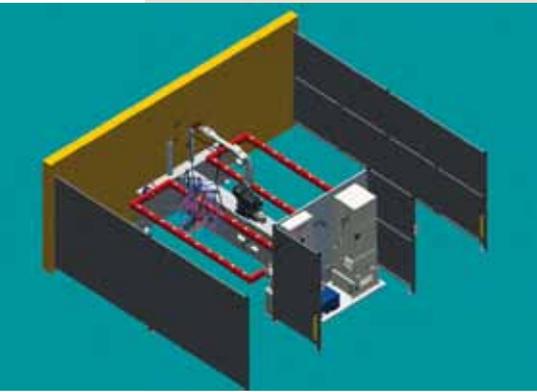
"We have mainly made the switch to automation for small series and repeat orders for laser cutting, machining and welding. As well as the welding robots, we also have 2 laser welding robots", says Miroslav Bazala. "Robot automation not only replaces manual welding, but also helps us to raise overall productivity levels. About 80 percent of the welding is now done by the robots, which is equal to the work of 18-24 manual welders. This is how we have overcome the lack of welders and guaranteed the continuity of our production process."

"It is also important for us to be able to fall back on service, training courses and support if programming issues arise. We're more than satisfied where that's concerned", says Miroslav Bazala. "The Czech branch of Valk Welding has trained our people to a very high professional level." www.bast.cz



Welding robots keep quality high at Rustek

By investing in three Valk Welding welding robot systems and the off-line programming software DTPS during the past four years, Rustek - a Danish pellet stove manufacturer - has succeeded in ensuring that its quality keeps pace with the rising demand.



SolidWorks CAD files are converted in the nesting program Cadman for the welder and form the basis of the offline programming of the welding robots in DTPS.



The welding robots form a vital component in the production of the 60,000 wood pellet stoves that Rustek delivers each year.



René Ramsdahl: "Without automation the company would not be able to exist in Denmark."



General subcontractor Rustek A/S, which has been a member of the Danish wood pellet stove manufacturer NBE Production Group since 2010, specialises in the production of the internal parts of these wood pellet stoves. Rustek reserves another 20 percent of its capacity to general supplies for third parties. In recent years the company - which employs only 13 people - has invested substantially in automating crucial parts of its production process.

Complex welding tasks

The use of a wood pellet stove for heating has risen sharply in recent years, not only in Danish households but also throughout the rest of Europe.

"The sharply growing demand caused us production problems, partly as a result of the relatively complex welding work on the internal steel parts of the stoves. "Many of the components are built up of several plate sections with complex welding details", explains CEO René Ramsdahl. "Each product easily involves about 15 to 20 metres of welding that has to be pressure-resistant and in some cases has as many as four different connections in each product. That calls for professional knowledge and the right processing strategy.

Experience gained with 'Mini cell'

"In 2012 we made a start with the robotised welding of small stainless steel products on a Valk Welding 'Mini cell'. When the volume rose to over 2,000 units a year we took the step a year later to using a larger welding robot on an H-frame. That gave us the extra capacity we needed to weld the frames for the internal parts of the wood pellet stoves with the robot. This has also significantly improved the quality of the welding. "The welding robot produces a very precise weld that is the same for each product", says René Ramsdahl.

Wood pellet stoves
Wood pellet stoves are used mainly in Scandinavia to get rid of the excessive amount of wood dust. Wood dust can not be burnt on its own. But this is possible if it is turned into small stumps or pellets! The pellets create a pleasant flame pattern in a wood stove but also feature greater comfort and a higher energy output. They are burnt so efficiently that they barely leave any ash behind. This makes them more environmentally-friendly than ordinary firewood.

Third welding robot

The production volume has risen sharply in a period of four years. As well as automating the cutting and welding process, Rustek has also automated the bend processing with a robot on the press brake. "The increase of volume also made it necessary to extend the capacity of the welding department.

The third welding robot runs on a track and moves back and forth between the two stations. This solution enabled us to work more flexible and also helped with the implementation of the larger products", says the CEO. The third welding robot system supplied by Valk Welding features the latest Panasonic TA-1900WG3 welding robot, which is designed especially for arc welding.

Software is the key

The investments in software and its optimisation form an important component of the annual budget. "Although it sometimes feels like a big black hole, the investments in software ultimately save us a lot of time. Each update takes the optimisation of the production process a step further", explains René Ramsdahl. That also applies to the welding department, where we program the welding robots increasingly smartly offline with the DTPS package from Valk Welding. This not only yields time savings in the form of shorter cycle times, but results in a longer working time for the welding robots. (DTPS upgrade cost less than 1,000.- Euro a year)

All in all, believes René Ramsdahl, without the automation efforts the company would not be able to exist in Denmark. The production processes are now automated from bending to welding and everything in between. That enables us to deliver a high quality product that is also cheaper and above all better than that of our competitors", he adds. www.rustek.dk



NETHERLANDS

Assemblies as a specialist field

Van Lierop takes the step to welding robots 2.0

The Dutch supplier Van Lierop has a good story on metal. The company presents itself as a specialist in assemblies and strives to be the best in its field. This has led among other things to the investment in a welding robot cell with 3 stations in which a Panasonic welding robot on a track operating in 2 shifts has made a 'one piece flow' possible. CEO Hans van Lierop: "Supply has become top sport and if you want to play in the Champion's League you and your employees have to continuously improve, innovate and automate.



Employing 30 people, Van Lierop is one of the many medium-sized sub-contractors in the Eindhoven region. The company succeeds in gaining customer loyalty by providing them with a full-service solution. "We do this by talking with our customers as early as in the prototype phase. They often have only limited knowledge of manufacturing and are looking for a good partner that contributes actions as well as words. Customers know what they want and we know the best and most efficient way of making it for them.

The fact that Van Lierop is able to deliver custom products and serial work at a good price makes it the best partner for sub-assemblies. We have all the disciplines we need for that", explains Hans van Lierop.

Focus on assemblies

Van Lierop originally started out as a construction company but has since developed entirely into a supply company for both single-piece custom made products as well as serial-based sheet metal and welded assemblies.

Its customers are found in various market segments, and exports account for 30% of its sales outside the Netherlands. Various types of steel (including high tensile steels) and stainless steel are processed, including the required certifications, including NEN 3834-2. Investments in laser cutting and welding robotisation have made it possible to produce flexibly and economically small series. "During the crisis period in 2009 we re-evaluated this and considered what we are best at and how we could raise our profile even more. The answer always came back to assemblies. We have focused entirely on this area since then, both for single-piece custom made products and repeat orders."

Welding robots 2.0

Van Lierop already had 2 Valk Welding systems with Panasonic VR-008 welding robots on an H-frame setup, each with 2 work stations. Van Lierop: "This makes it possible for us to completely weld smaller work pieces in one set-up. For larger assemblies consisting of several sides





Win-win situation

Van Lierop believes that this way of working creates a win-win situation for the employees, the company and the customer. "The welding work has now become less monotonous. Employees aren't challenged by the forecast to weld 4,000 pieces, but yes they are by the prospect of helping out with the setting of the welding robot. Their knowledge of the welding sequence, heat input, tolerances and product specifications are of great importance here. And the benefits yielded by automation will also help us to keep the work within the Netherlands. That would no longer have been financially possible with manual welding."

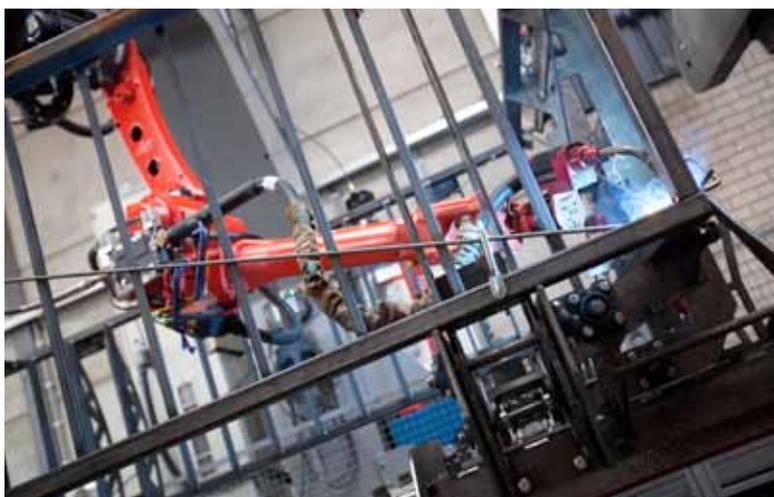
Ready for the next step

To Van Lierop the investment in the welding robot installation was therefore a big step in the right direction: "The welding robot is programmed offline. We can weld larger products with internal steps in both steel and stainless steel and retool faster with tools that we have developed ourselves. But the hectic market continues to demand further measures. We will have to respond more to the 24/7 economy and take a closer look at the limits of automation. Unmanned welding could be the next step, concludes Hans van Lierop.

we first made the separate assemblies in series and then put them together entirely manually. That involves a lot of handling and calls for extra internal storage. Together with Valk Welding we analysed how we could get rid of those steps. The result was a setup with 3 work stations next to each other that were operated by a Panasonic TA-1900 welding robot suspended on a gantry on a track with 13 m stroke. Parts which are welded on the outer stations and then assembled on the middle station are completely welded by the robot. That made it possible to eliminate a number of internal steps and we are now able to produce even more profitably in larger series and with less manual work.

Installation universally deployable

The welding robot installation has three 4 x 2.5 m work stations but can also be converted into two stations with a work range of 6 x 2.5 m by replacing fencing and moving counter bearings. The welding robot installation is currently being used to produce an order of 4,000 cheese boxes, but in December we will be using it for other, larger work pieces that are assembled in multiple steps. We're now making preparations for that: good preparation is often half of the work!





POLAND



Leszek Sawicki: "There will be more and more robots and we expect more OEM customers too."

Polish subcontractor works successfully for Swedish OEM

The high cost level in Scandinavia and low flexibility from China is forcing Swedish manufacturers to reconsider production. Poland is taking an attractive region for outsourcing work to subcontractors. Labor costs are lower and the distance between the two countries is not large. Ålö, the world largest manufacturers of frontloaders for farm tractors in Sweden, asked therefor the Swedish/Polish company PPW Manufacturing AB. In close collaboration with the Polish subcontractor Progress the contract was concluded for the production of components and sub-assemblies for Ålö. The company set up Valk Welding welding robots for this.



One of the conditions that Ålö required was a high consistent quality. Director and owner of Progress Leszek Sawicki: "The products require continuous high quality of welding so it was strongly recommended by the customer to weld the products from the beginning on robots. Only robotic welding guarantees continuous high standard of welding. We already use two welding robots, which we use for other, less complicated, but high volume products. PPW Manufacturing have good experience with Valk Welding in different companies and they strongly recommended to work with Valk Welding. We also visited truck builder Wielton in Wielun as a Valk Welding reference."

Mid 2015, Valk Welding installed a Panasonic TL-1800WG3 robot on an H-Frame, a tested

and reliable concept of robotic system, and a DTPS offline programming package. Leszek Sawicki: "Offline programming was new for us but it is a very useful tool."

Based on success of Progress delivering to Ålö, more contracts for deliveries of the components and sub-assemblies was concluded. "We will make around 13,000 components and sub-assemblies in 2016 but expect to reach 75,000 in 2017. For that reason we ordered two more welding robots. A 2nd one is already installed, a 3rd one will be supplied end of 2016. Next year we will invest into a 4th one", thus Leszek Sawicki. The growth of Progress business has been so rapid that a new factory will be built together with Robert Mazurkiewicz, who joins the business as technical director.

www.zmprogress.pl

Tradeshows

Sepem

Douai, France
24-26 January 2017

Ouest Industries

Rennes, France
07-09 February 2017

Int'l Welding Exhibition

Poznan, Poland
06-09 June 2017

Technische Industriële Vakbeurs

Hardenberg, Netherlands
19-21 September 2017

Schweissen & Schneiden

Essen, Germany
25-29 September 2017

MSV

Brno, Czech Republic
09-13 October 2017

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