



Construction company De Waal
USE OF WELDING ROBOTS CAUSES INNOVATION
IN SHIPBUILDING

Haas + Sohn Rukov s.r.o.
WOOD STOVES ON THE WELDING ROBOT

N.V. Solide S.A.
SCAFFOLDING MANUFACTURER DECREASES
WELDING TIME

DELIVERY TIME OF STANDARD H-FRAMES
DRAMATICALLY REDUCED

BRAMIDAN ACCELERATES PRODUCTION FLOW

WELDING WIRE SUPPLIED ON TRACK
WITHOUT PROBLEMS

COLOFON

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Valk Welding looks ahead

GROW ALONG WITH THE MARKET IN A CONTROLLED WAY

Partly because of the strong shortage of craftsmen, professional welders, and the ongoing desire to improve the efficiency in the field of manufacturing, the demand for automation solutions in the field of welding has further increased in the past year. In that time, Valk Welding built a record number of welding robot systems for customers all over Europe (over 200 systems). To meet the growing market demand, and especially to guarantee the quality of our robot systems in the future, Valk Welding always works on the improvement of the organization, such as logistics and delivery reliability. Therefore, we have started setting up a new production line for standard cells on H-shaped frames, last year. These systems are now completely built by one or two employees per system, inspired by the QRM philosophy. That is why the manufacturing time could be strongly shortened back to 1 week and the capacity could be increased. You will read more about this in this new edition.

Also in the field of company organization, we made big improvements by giving more responsibility to the separate country branches. The branches which all manage their own language area, have a management of their own, which controls the own operation. That is done according to the agreements, guidelines, and processes, which are the same for all branches and for everyone. The separate branches in The Netherlands, Belgium, France, Denmark, The Czech Republic, Poland and Germany are now managed by a Management Team from Valk Welding Group.

In the meantime, there are also plans for an assembly plant in the Czech Republic, and this assembly plant will be operational from 2020. With all these measures, Valk Welding will continue to keep its promises of high-quality technology with high usability in the future and will increase this where needed.

Remco H. Valk
CEO Valk Welding Group



VALK WELDING GROUP

The new CCO Peter Pittomvils watches amused at the experience of our customers with the use of VR technology

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Jörg Gerlitzki to set up Valk Welding Germany



As of January 1st 2019 Jörg Gerlitzki started as country manager at Valk Welding to further strengthen the company's position on the German market. The mechanical engineer has many years of experience in machine building, welding technology and automation and is well established in the German market. Jörg is working on the development of a Germansales, service and support organization.

Valk Welding has been active in the German market since 2010. The growing market in Germany, however, requires a stronger local presence. An own branch in Germany is needed to support this properly. "Our goal is to grow to 15 to 20 employees in the next 10 years and to set up a branch office with training facilities and technical support this year, as well as local support centers throughout whole Germany" explains CEO Remco H. Valk. With the expansion of its own sales and service organization, Valk Welding wants to further improve its service to its German customers as a competent and local partner. With its expertise and innovative solutions in the field of robotics, automation and welding technology,

the company can also offer an answer to the growing demand for high-quality automation systems. Jörg Gerlitzki: "With its welding robot technology, Valk Welding offers a premium solution for the German market. With more than 3,000 systems installed in Europe, Valk Welding is already the market leader in this field. The application possibilities and opportunities on the German market are enormous and we will continue to expanding with our own team, which for me is not only an interesting task, but also an excellent opportunity." JGE@valkwelding.com Tel. :+49 152 29 109 708

Valk Welding CZ starts building new facility



For its Czech division, Valk Welding CZ s.r.o., Valk Welding is building a new facility in Paskov, Ostrava region. "In order to serve the market even better and to create room for further growth, the step towards new a facility could not be delayed," explains country manager Jakub Vavrecka.

Since Valk Welding in started its own branch office in this region in 2004, the company has grown strongly with around 500 installed robotsystems in central Europe (Czech Republic, Slovakia, Poland and Hungary).

In the new facility, which will be completed at the end of this year, Valk Welding CZ s.r.o will have 2,500 m² of floor space. In addition to more space for offices, warehouse, demo centre, technical and training centre, an assembly area for welding robot is scheduled in the building. The Valk Welding group will build systems in the Czech Republic from now on.



Valk Welding Usersdays



November 2018 Valk Welding France organized its own Users-day for it's French-speaking customers. At the Users-day about 30 companies participated. Valk Welding offers it's own customers the opportunity to be informed in their own language about the latest developments in the field of welding robotisation and also to get feedback from other users during informal meetings.

In addition to presentations on new products and explanations about robot maintenance, welding fume extraction, use of different shielding gasses and spareparts, visitors could attend extensive demonstrations during the afternoon, including the Super Active Wire process and seam tracking with the Arc-Eye laser sensor. Valk Welding France wants to organize the Users-day every year from now on.

Visit Valk Welding at international trade fairs

Valk Welding believes that participation in trade fairs is an important moment to meet existing customers and show their knowledge and know-how to companies not know to Valk Welding. This year a number of important trade fairs are on the program in Denmark, the Czech Republic, The Netherlands, France and Belgium. Valk Welding will present the latest developments in the field of welding robotics, offline programming, wire feeding and welding consumables.



An actual list of tradeshows is shown at the backpage and at www.valkwelding.com/en/news/tradeshows



Autodesk sees big potential in 3D printing with welding robots

USA

Autodesk imagines a future where production and manufacturing comes together. "Architects and manufacturers want to be able to produce on location in order to make the manufacturing process more efficient and reproducible," Nicolas Mangon says, Vice President of AEC Strategy and Marketing of Autodesk. Together with Valk Welding, Autodesk presented a mobile additive manufacturing cell during the Autodesk University, last autumn in Las Vegas.

WAAM (WIRE ARC ADDITIVE MANUFACTURING) ON THE CONSTRUCTION SITE

Robert Bowerman is a technical consultant at Autodesk and closely involved in the project. The use of WAAM (Wire Arc Additive Manufacturing) in the manufacturing field comes with a couple of advantages, he says. "Firstly, the technology offers a large amount of shaping freedom, which makes it suitable to produce complex parts. Secondly, you can produce the parts on location." That is how Robert and his team got the idea to ask Valk Welding to develop a concept for a mobile WAAM cell which can be easily transported and installed anywhere. "That is interesting, for instance, for projects in the field of construction, at which you can produce single pieces yourself at the construction site. For instance, unique parts, of which the actual size has to be determined at the job."

AUTODESK UNIVERSITY 2018 LAS VEGAS

Autodesk showed the WAAM cell during Autodesk University 2018 in Las Vegas to over 11,000 visitors from all over the world. Robert Bowerman: "The goal of this event was, among other things, to inspire visitors with new technologies and applications. Despite the fact that the concept is completely new and unique, the first manufacturing companies showed interest already. The Dutch manufacturing company Dura Vermeer wants to examine the possibility to print customized metal connecting elements for a glass facade on location. Other visitors also saw the possibilities for repairs of large workpieces, such as parts of tunnel drills." Autodesk wants to take the mobile 3D printing cell all across Europe to show companies how they could use this technology. www.autodesk.com



HOLLAND



One of the components Robotik Toolbox printed for the Dutch engineering firm Dura Vermeer, is a prototype "steel spider", a connector for the fixation of the glass curtain wall to the steel constructions.

Use of welding robots causes innovation in shipbuilding

DE WAAL WELDS SINGLE-PIECE TILLERS WITH THE ROBOT

DE WAAL
MACHINEFABRIEK - SCHEEPSTECHNIEK

Within the four-year program 'Applied Innovations for Maritime Automation' Scheepswerf Slob and Valk Welding participate in the project alongside De Waal. Before the four-year project TIMA, which finishes at the end of this year, the final welding automation for the welding of complete rudder parts has to be finished. Mark van Keulen, technical engineer at De Waal is working on this with Valk Welding.

AGING OF KNOW-HOW

"Also in the field of shipbuilding, we are dealing with aging of know-how, causing us to lose an enormously valuable part of the knowledge and experience if we don't take care in time. We see that it is difficult to get new professional welders or to train welders-to-be. That is why we outsource part of the work. In the meantime, the pressure to keep up with the high-times of production loads is difficult, knowing craft trades will disappear in due time, and a large part of the work will be moved abroad. That is why we see the use of

welding robots as a possible solution," founding director Johan Verlaan explains. "That is why we started this innovative battle."



welding robots as a possible solution," founding director Johan Verlaan explains. "That is why we started this innovative battle."

CURRENT SITUATION

In the current situation, the tillers for the rudder systems are welded semi-automatically. The circle-shaped welds have to be altered in several layers and they have to be welded to both sides to prevent deformation. The operator is present during the whole production cycle, to turn the workpiece with a crane. "The cycle time is 40 minutes, of which 16 minutes are handling time."

85% SAVING IN MAN-HOURS

In the test setup, for which Valk Welding delivered a Panasonic TM-2000 welding robot and a 2 ton positioner with counter bear-

ing, the tillers are prepared and positioned. De Waal developed the hydraulic clamping system, suitable for the whole product family. "The welding robot first welds on one side up to welding height A8, after that, the other side and thereafter, from A8 to welding height A15 on the second side. The workpiece is rotated 5 times this way in the manipulator to prevent deformation and is completely welded in 24.5 minutes, of which 14.3 minutes are effective welding time and the rest is searching and touch sensing sequences. Because the operator only has to be present the first five minutes to clamp the workpiece and start the welding robot, the saving in man-hours is 85% compared to the semi-automatic production," Mark van Keulen says.

RECORD WELDING KNOWLEDGE IN SOFTWARE

For large welding heights, the Thick plate

module from Panasonic is used. Thick plate ensures that every weld is copied automatically, so it is not needed to program every single weld. Furthermore, the welding heights and the welding order is recorded in the software, so both the welding quality and the production knowledge is guaranteed. That procedure is now certified by Lloyds, as well as the welding operator. "That is how you guarantee the know-how to be preserved for the future, and a high-quality product is delivered with a constant welding quality," Van Keulen emphasizes.

TOWARDS A FINAL CONCEPT

To make the use of the welding robot profitable, a larger installation is necessary, in which the welding robot operates in multiple workstations. For that, several concepts are being made at this moment, based on a welding robot on an XYZ gallows concept and a welding robot on a portal construction. One of these concepts will be built before the finishing of the 'TIMA' project at the end of

SMART

The software development within the TIMA project is subsidized by the European Union and the province Zuid-Holland, The Netherlands. Europe aims to make The Netherlands the leader in the field of robotics and wants the of origin pure Dutch shipbuilding to stay in The Netherlands and to be carried out in a 'smart' way with high-tech robots. Therefore, the project has the status SMART Industry (Specific Measurable Acceptable Realistic Timeframe). Valk Welding plays a big role in this with the development of the software and the delivery of the hardware.

Is it possible to let welding robots work from drawing programs and recording specific welding knowledge in software? This was a major challenge for Construction company De Waal, a leader in propulsion technology for shipbuilding. In 2015 De Waal therefore started the program 'Applied Innovations for Maritime Automation' (TIMA in Dutch) to achieve the robotised welding of tillers for rudders systems. In the first test phase, it has been possible to weld tillers with a robot without having to spend a lot of time programming. In the meantime both welding procedure and welder have been certified to 'weld under' and the project is now in the final phase.

Wood stoves on the welding robot

HAAS + SOHN INVESTS IN WELDING ROBOT AUTOMATION

More and more wood stove, pellet stoves, and fireplace manufacturers choose to use welding robots. Especially in Scandinavia and Middle European countries, where these stoves are used a lot for burning wood and brown coal briquettes, Valk Welding delivered multiple installations into this branch. The Czech manufacturer Haas + Sohn Rukov is one of those manufacturers. "We mainly made the decision to invest in welding robots not only to cover the loss in manpower, but also to increase the productivity, and improve the quality and productivity", Michael Cintlová marketing specialist at Haas + Sohn explains.

Haas + Sohn has about 500 employees, divided over production establishments in the Czech Republic and Hungary. Annually, the company produces over 17 thousand stoves that are being exported to the European market. Because the manufacturer adjusts its systems to the specific market demands per country and meets the strictest criteria of the European Union, Haas + Sohn managed to get a leading position in this market. "In order to keep maintaining this position, we are aware that in order to increase the quality and productivity, it is needed to keep investing in production automatization and robotisation," Michael Cintlová says. Based on the specifications, options, and flexibility, the company chose for a Valk Welding system, with Panasonic welding robots.

A STEP TOWARDS ROBOTISED WELDING

"Currently, we have nine welding boxes for manual welding, which are still the base of the production. These will eventually be replaced by new, automatic, and ergonomically better solutions." The first installation Valk Welding delivered is a welding robot installation based on an approved E-frame concept with a Panasonic TAWERS TL-2000WG3 welding robot and two workstations. Both workstations are equipped with a drop center positioner for maximum availability for the welding of the stoves.

PROGRAMMING TRAINING AT VALK WELDING

At this moment, four production models are being made on the welding robot. "Housings that are too complex to weld manually. In the future, we will also weld sub-groups with the robot, like ashtrays, smoke channels and simple parts," Michael Cintl explains. The first stove model is programmed in close collaboration with Valk Welding CZ. The other models were programmed by technicians and welders from Haas + Sohn, who were trained by Valk Welding CZ. "The collaboration with Valk Welding has worked very well from the beginning, and we are very satisfied. We are looking forward to the installation of the next welding robots", Michael Cintlová says.

AUTOMATISATION IS ESSENTIAL

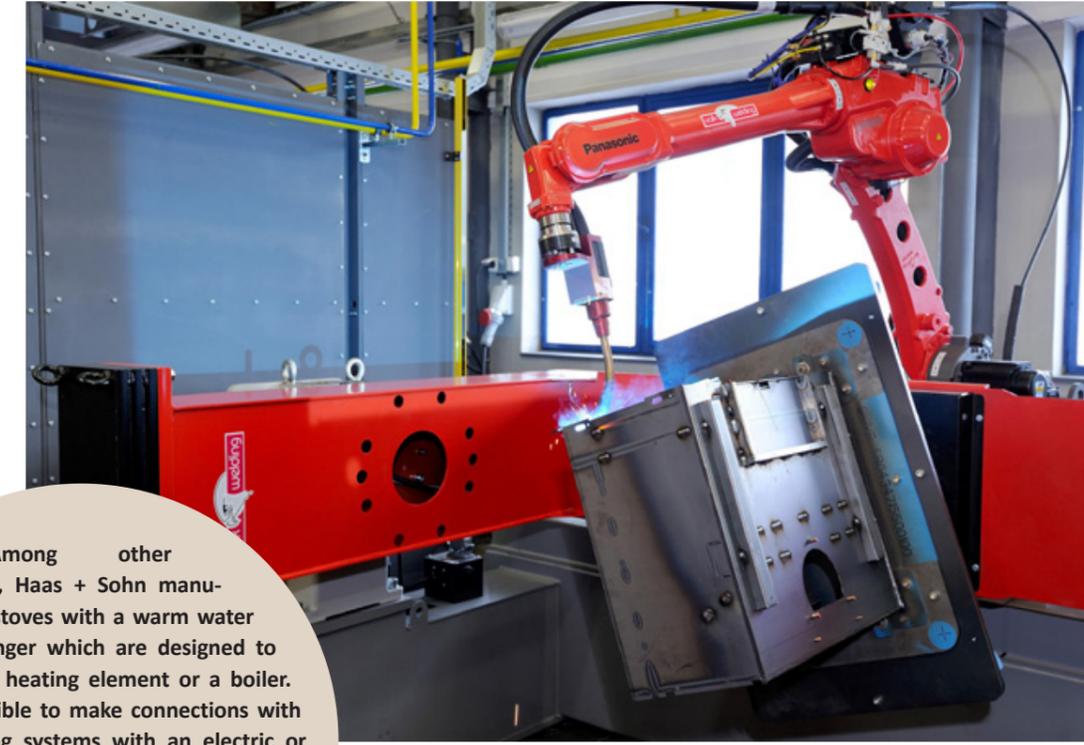
Increasing the production capacity, expansion of the programme,



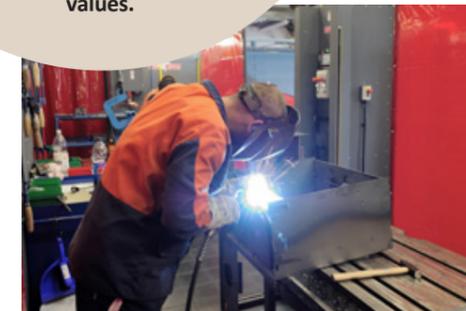
www.haassohn-rukov.cz



Among other things, Haas + Sohn manufactures stoves with a warm water heat exchanger which are designed to connect to a heating element or a boiler. It is also possible to make connections with existing heating systems with an electric or gas boiler. Stoves of such kind are suitable for the heating of the whole house. Thanks to the high-quality combustion, and high efficiency (mostly over 80%), these fireplaces have low emission values.



Michael Cintlová: "The collaboration with Valk Welding has worked very well from the beginning, and we are very satisfied."



and higher efficiency are important reasons for Haas + Sohn to invest in automatization. However, a general lack of professional welders plays an important role in welding production. "A situation in which we see no progress in the future. We partially

cover this by automatization and robotization. Besides that, we intensively collaborate with technical schools, and we offer students professional coaching with an eye on their future employment at Haas + Sohn," Michael Cintlová says.

Delivery time of standard H-frames dramatically reduced

A short construction time and a larger capacity: that is what Valk Welding has achieved with its separate production line of welding robot systems of the well-known H-shaped frame systems. In its pursuit of continuous improvement of processes, quality and capacity, Valk Welding was inspired by the QRM (Quick Response Manufacturing) philosophy. One or two employees complete each of these systems according to order in one production run.

In the H-shaped frame's, the two working stations are opposite of each other. When one station of the welding robot system is loaded by an operator, the other station is welding. It is clear that this enables a high performance of the welding robot system. Valk Welding has already installed more than 500 H-Frame systems at customers throughout Europe. This makes it the most successful standardized system of the European market.

BUILT TO ORDER

"Until recently, we built several frames simultaneously for various customers. We thought that this enabled us to deliver these systems from stock but afterwards, we often had to make customer-specific adjustments again," says Gerwin Bos, QRM assembly manager and trainer closely involved in the improvement process of the construction. "This significantly disrupted the process and planning. By only building according to order, you prevent that from happening."

COMPLETELY FINISH CONSTRUCTING EACH ONE

Together with colleagues from the engineering department, we looked at how we could use the QRM philosophy. This means that one or two employees are dedicated to this philosophy and completely build a system in one run. "In principle, you then have one frame on the shop floor onto which all components are built in a continuous workflow. In order to achieve this, both the bare frames and the components that have to be built onto it must be present. For this purpose, assembly within the QRM team works closely together with engineering and work preparation, which ensures that all components, the base frame as well as the programmed PLC, are present just-in-time," explains Gerwin Bos. This results in a delivery time of max. 8 weeks.



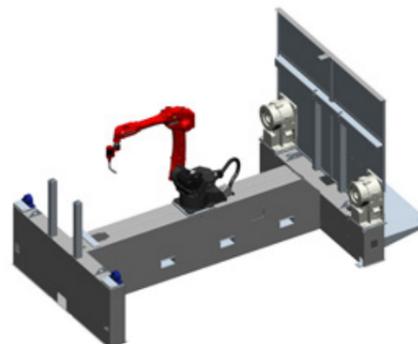
ADVANTAGES OF FIXED FRAME ARRANGEMENTS

- A welding robot in a fixed frame arrangement offers the advantage that both the welding robot and the controller, fixtures, manipulators and safety can be mounted as a complete configuration and can be installed as one unit at the end user.
- Because all components are delivered on a distortion-free frame system, the assembly time at the customer is extremely short.
- A distortion-free frame also offers the possibility of moving the cell at a later time and putting it back into operation immediately. An internal relocation results in considerable cost and time savings, because no re-programming is necessary. All frames have a torsion-free construction.
- In addition to H-shaped frame's, Valk Welding builds E-shaped and T-shaped frames on torsion free concepts for several years.

IN-HOUSE TRAINING

Both new employees and trainees follow an in-house training at Valk Welding. Part of this is the assembly of the welding robot systems in the H-shaped frames. Together with QRM assembly manager Gerwin Bos, these young professionals learn to assemble the systems completely according to a fixed procedure. "Because these employees completely construct each system, you see increasing involvement. Employees are proud of what they have built. Moreover, after a number of cells, an employee knows exactly what is standard and what the customer-specific adjustments are," continues Gerwin Bos.

Valk Welding has already installed more than 500 H-Frame systems at customers throughout Europe.



EVALUATION

The project, which started middle of September 2018, has recently been evaluated. Sander Verhoef, who set up the project within Valk Welding, thinks that this production not only leads to committed and motivated employees. Production also takes up less space. "Where we used to have seven systems under construction simultaneously, there is now only one on the shop floor. This way, we now build one complete system per week, which has enabled us to significantly reduce the delivery times of these welding robot systems in an H-shaped frame arrangement. In addition, the construction procedures have been further improved. The result is that we have achieved a constant way of assembling and with that a constant quality. The intention is to assemble welding robot systems in E-shaped frames and robot shifters in this way in the near future."



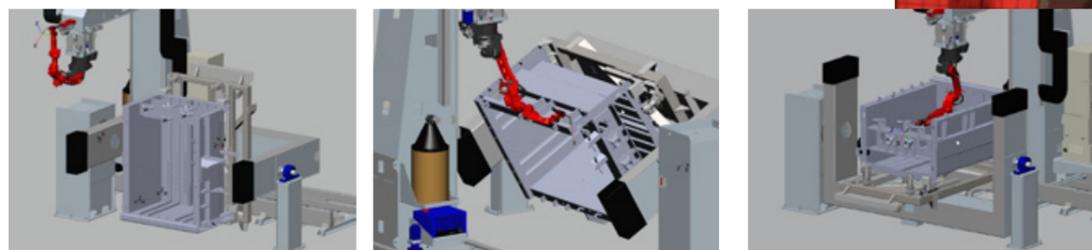
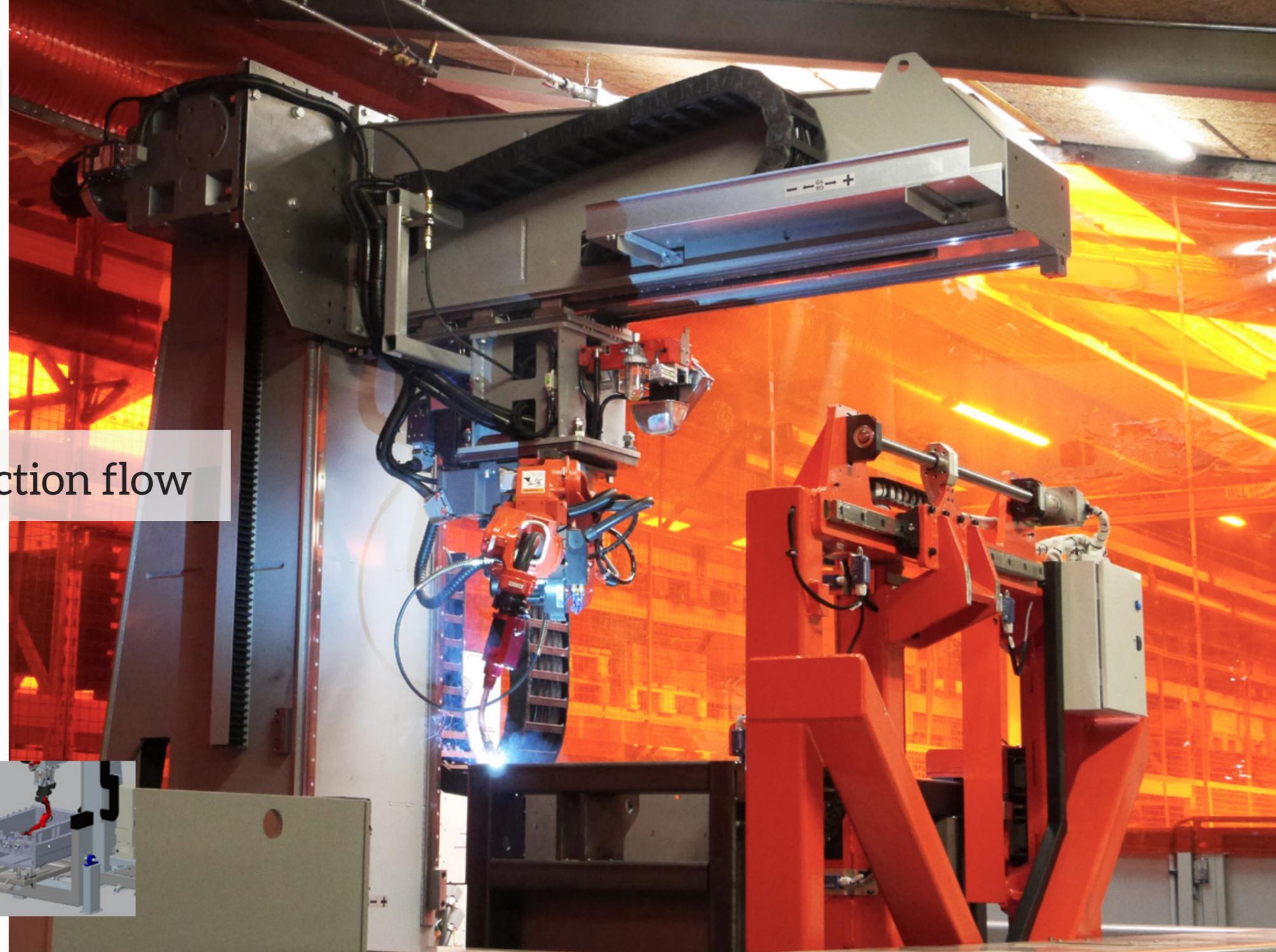
DANMARK



BRAMIDAN

Bramidan accelerates production flow

A strong growth in the business and a shortage of specialist welders, forced the Danish company Bramidan to make a step to robot automation. Bramidan asked Valk Welding to help them finding a solution to run the high mix of products within limited changeover times. Production Manager, Niels Grue Sandberg, explained, "With the welding robots we get a better welding quality and a much faster production flow through the company. On average, three times faster than manual welding."



Bramidan is a leading manufacturer of vertical balers for compaction of cardboard, plastic and other recyclable materials. With safety in mind, the balers are designed and built according to the highest quality standards. Bramidan has a total of 135 employees in Bramming at Esbjerg and in sales departments around the world. 95 Percent of the production is exported and the company is one of the three leading manufacturers of vertical balers in the world.

EXPERIENCE WITH PANASONIC
Sandberg has more than 20 years' experience with welding robots. "In a previous job, I got to know Panasonic as a leading brand. Panasonic aims at a higher level

with its all-in-one concept and with Valk Welding, I immediately had the feeling that with their competence, they would be able to fulfill our requirements. We had already adjusted the design of all of our models to be even more suitable for robot welding, so that we were well prepared for the next phase," explained Niels Grue Sandberg.

NO STANDARD SOLUTION

"Where other providers to a larger extent offered a standard solution, Valk Welding looked at what we needed instead of what they wanted to sell. For that reason, Valk Welding was the only company we continued with after the first rounds. One of the problems was that we no longer wanted

to have separate fixture systems for the various baler models. Valk Welding suggested a 'multi-fixture' solution that could hold the various models without any adjustments, which greatly reduced the changeover times. Furthermore, their Quick Touch concept is a very efficient and reliable welding seam searching system."

Productiemanager Niels Grue Sandberg: *"I cannot imagine what we should do without the robots today."*

COMPLEX PRODUCTS

Bramidan's balers are first pre-assembled from many different steel parts and then welded by the robot. To provide the welding

robot optimal access to the complex products, Valk Welding chose a concept where the Panasonic TM 1600 WG3 welding robot is mounted on an XYZ gallows-type construction in a hanging position and moves along a 4-metre HLVP-VP track. The frames are positioned in a drop center manipulator to provide optimal accessibility for the welding robot. Niels Grue Sandberg "Units with long time welding runs, requires a stable process. Today we can run one unit in two to three hours without any interruption. The installation runs 140+ hours a week now. On a second system on a H-frame we are welding smaller parts and sub-assemblies."

LIGHTS OUT PRODUCTION

Bramidan previously had a manpower based manual production in two shift. With the introduction of the new welding robot installation, the amount of shifts is not reduced but capacity is increased significantly also with robot continues welding during the last part of the day while there are no employees present in the company. "By the start of the next shift, the welding robot has finished welding the frame. Such a high level of reliability was previously unattainable. Furthermore, it results in a considerable saving on the labour costs, which are rather high in Denmark," said Niels Grue Sandberg.

"I cannot imagine what we should do without the robots today. Since we have increased the workflow in the production and the business is still growing, we are at the point to invest in a larger copy of the biggest welding robot installation, that can run without manpower during the night and weekend shift. Then we can further expand the production capacity and it keeps the cost down in Denmark, where the salaries are high."

www.bramidan.dk

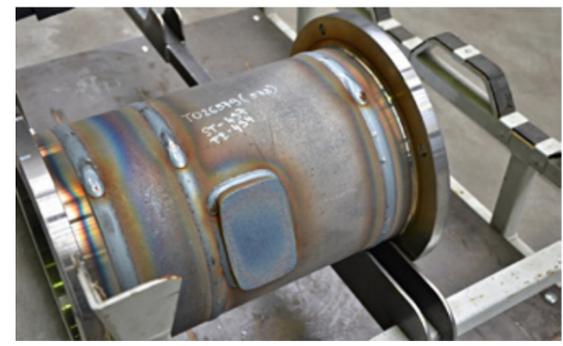
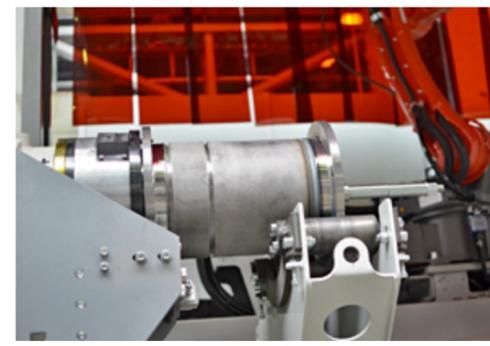


CZECH
REPUBLIC



Increased quality and reliability of chassis, thanks to the use of a welding robot

In the past few years, Truck manufacturer TATRA TRUCKS in the Czech town Koprivnice has made big steps in the improvement of efficiency of the production, lowering the production costs, increasing the quality, and improving the durability and liability of its vehicles. The use of the welding robot installation which Valk Welding delivered for the production of backbone tubes for the chassis (so-called intermediate shafts), plays a big role in this.



TATRA PHOENIX EURO 6
TATRA TRUCKS, the oldest automobile factory in Middle Europe, is a prominent Czech manufacturer of heavy trucks for civilian and other use and is known for its unique and proven chassis concept. This concept is the base for the renewed chassis for the newest TATRA Phoenix Euro 6 product line, which was developed in close collaboration with DAF and PACCAR. With the unique combination of the very strong TATRA chassis and the reliable and modern DAF cabin and PACCAR components, TATRA delivers modern trucks of which more than half of them are sold outside the Czech Republic.

Standardizing individual product groups and subgroups of different production lines was one of the most important measures taken to enable the goals of efficiency improvement, cost reduction, and quality increase. Standardizing the outside diameter of the backbone tubes was the base for a modular chassis structure. This requires the introduction of new procedures and production technologies, among which the robotised welding of the backbone tubes, and the finishing on the CNC lathe and milling machines.

BACKBONE TUBES FOR CHASSIS
The backbone tubes are standardized to a dimension of 273 mm ϕ . "An important

innovation is the fact that the new bearing supports are now welded onto the outside surface with the robot. The high requirements of the quality of the welds, and especially the increasing demands of our customers brought us to take this fundamental step. The new innovative design solutions cleared the way for an effective and modular chassis structure," Milan Olšanský from TATRA TRUCKS explains .

WELDING ROBOT ON E-SHAPED FRAME
"At TATRA TRUCKS, we have installed a Panasonic TL-1800WG3 welding robot on an E-shaped frame (E-3100), with two workstations arranged side by side, a Panadice 500 manipulator, and a special support to

support the backbone tubes during the welding. The special support can be shifted over the full length of the E-shaped frame, so the backbone tubes can be welded with the robot upto a length of 1,800 mm (with the possibility of maximum 2,500 mm). The workplace is also equipped with a fume extraction device, and is completely CE approved," says Richard Mares of Valk Welding CZ.

HIGH-QUALITY WELDING
The design of the backbone tubes are adjusted to make it suitable for robot welding. The welding process is set after multiple tests with a variety of parameters. The bearing supports are assembled when

clamped and are welded without being pre-tacked, to prevent deformation. Partly because of the high-quality welding, the bearing supports managed to withstand a minimum of 1,000,000 cycles during the durability test, which helped TATRA TRUCKS improving the liability even more.

NO PROGRAMMING NEEDED
Valk Welding developed one master parametric programme, using QPT so all types of bearing supports can be welded with the robot. Even the bearing supports that do not fit within the standard product range can be welded without any programming effort. The operator only needs to set up the parameters of the correspond-

ing bearing support, and the master programme automatically generates the program for the welding robot.
www.tatra.trucks.com



BELGIUM



Jan Van Aerschot: "Every next generation has made an even shorter welding time and an improved quality possible."

Scaffolding manufacturer decreases welding time

While others decided to produce cheaper in China, the Belgium manufacturer of aluminium climbing materials, Solide, chose to optimize the production and keep it in-house. The result: extension from 2 to 4 welding robot installations, of which the last one equipped with the AWP (Active Wire Process) for aluminium welding. Production manager Jan van Aerschot: "Our 7-rung scaffoldings are now welded 30% faster with it."

Solide is a well-known brand in the field of aluminium scaffoldings, step scaffoldings, and basic scaffolding. Jan van Aerschot: "With the brand Solide, we focus on the professional market, that is why our scaffoldings can withstand intensive use, to which we add 10 years of guarantee on manufacturing defects. Solide scaffoldings and scaffolding are exclusively sold via retail trade in surrounding countries."

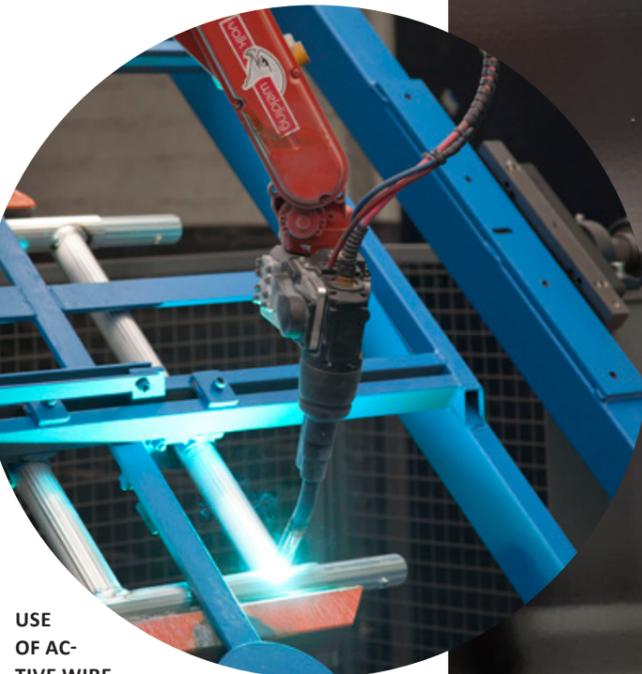
PRODUCING MORE FLEXIBLE AND FASTER

Solide sticks to the strategy to only focus on the retail trade, and in that way keep the quality as high as possible. To be able to produce that profitably, Solide wanted to increase the flexibility and speed where possible. That is the reason the welding production of the 7-rung scaffoldings was taken over to a Valk Welding system, using a Panasonic robot. Until recently, these scaffoldings were welded with a Reis robot. The aim was to decrease both the welding time and the changing time.

3 WORKSTATIONS IN LINE ARRANGEMENT

With Valk Welding, which installed the first arc-welding robot at Solide in 1992, a concept was made based on a Panasonic TM-1800WG3 suspended welding robot on a gallow construction and 3 workstations in line. The welding robot moves over a 12 m HLVP-VP-12000 track and one workstation is equipped with a quick exchange change system. With this concept, Quick Touch wire searching was used for the first time for Solide, to check up front if the pro-

grammed position of the welding seam matches the actual situation. Jan van Aerschot: "With Quick Touch, the robot scans the welding seam with the end of the welding wire, with which any deviations are automatically corrected by the welding robot."



USE OF ACTIVE WIRE FOR ALUMINIUM

Because the melting point of aluminium is lower than steel and stainless steel, the heat penetrates in the material fast at the start, which causes a higher risk of deformation. That is why Valk Welding used the Panasonic Active Wire Process System (AWP) for aluminium at Solide. Active Wire makes it possible to weld thin-sectioned materials quicker and



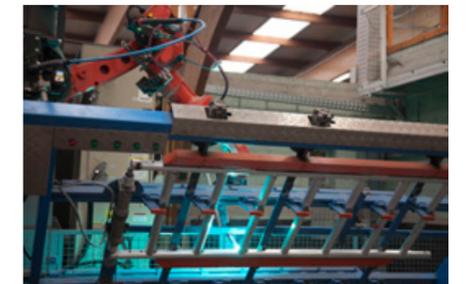
SOLIDE



without spatters. For that, the welding wire makes high frequency retracting movements during MIG welding, causing a very stable drop transition without spattering, and is obtained with much less heat input. For this welding technique, a welding torch with an integrated wire engine is used, and Active Wire software, which causes the wire movements. Solide uses 1.2 mm \varnothing Aluminium welding wire from Valk Welding.

WELDING TIME GREATLY DECREASED

Jan van Aerschot: "Thanks to the shorter changing times, the use of Quick Touch wire searching, and Active Wire, we could decrease the welding time by 30%. In addition, we now have to do less post-processing because of the smooth welds, and the accuracy has improved drastically." Because we have high volume and constant products, offline programming has no added value for Solide. That is why Valk Welding took care of the entire programming for the cell. In order to prevent the operator entering the wrong program, the program was made in a way that the welding robot sees which product is in the fixture.



ALL GENERATIONS PANASONIC WELDING ROBOTS

While the first AW80W from 1992 at Solide is still operating, in the past 26 years respectively a VR006 (2000), a TA-1900WG2 (2010), and last year a TM-1800WG3 were installed at Solide. Jan van Aerschot: "With those, we experienced the entire evolution regarding digitization. Every next generation has made an even shorter welding time and an improved quality possible."

www.solide.com





Centrum Pæle A/S, a member of the Centrum Group, Europe's largest manufacturer of steel reinforced concrete piles for foundation, implemented a complete production line for CPG Pile Splices at the end of 2016. CPG Pile Splices is used to join steel reinforced foundation piles when the total pile length needed supersedes the maximum transport- or production length of a single pile. The CPG Pile Splice makes it possible to connect 2 or more foundation piles together, on site, in a fast and efficient way without compromising the complete piles capacity and integrity.



Complete production line for Centrum Pæle

PRODUCTION LINE PRODUCES 120.000 PILE SPLICES PER YEAR

Due to the large quantity of Pile Splices needed, Valk Welding together with their Danish partners from Norre Aby, was contracted to design and install a fully automated production line with an estimated annual capacity of 120.000 units / year. After a non-stop production of 150,000 units the production line was upgraded to increase the type and dimensions of Pile Splices the line can process. The upgrade was completed in the summer of 2018 and included new jig types, new robot- & PLC-programming and extension of software to handle the increased number of product variations.

FROM FLAT SHEET TO FINISHED PRODUCT

The production process, making a Pile Splice involves Robot controlled handling, bending and dimension control of sheet metal parts. Robot handling, positioning and assembly of parts, followed by welding of the complete CPG Pile Splice. Following assembly and welding, the CPG Pile Splices is finished with plugs and corrosion protection, before being palletized, secured and wrapped in weather proof packaging.

UNMANNED PRODUCTION

The complete production line built by Valk Welding for Centrum Pæle A/S consists of the following equipment. 4 Panasonic handling robots & 2 Panasonic welding robots. A press brake with zero point table, laser measuring equipment, label printer, bar code scanners, several specialized feeder systems, material magazines, specialized dispensers, pallet handling, strapping & wrapping systems, connected by roller conveyors. All together making the complete production process progress unmanned.

HANDLING & WELDING

The most representative part from Valk Welding was to set up a closed cell, in which 2 handling robots and 2 welding robots collaborate to assemble and weld lock parts into CPG Pile

Splice box. To achieve the desired production output, 2 sets of collaborating robots were chosen, which produce synchronously. After finished welding, the Pile Splice is placed on a cooling conveyor by one of the handling robots. Via an integrated "sequence optimization" logic the assembly & welding cell optimizes the cycle time for each product. From the cooling conveyor the Pile Splices continue to the packaging/palletization cell. 1 employee is attending the production line to ensure the supply of parts, materials and remove full pallets with Pile Splices ready for shipping.

OVERALL EQUIPMENT EFFECTIVITY (OEE)

The production line control consists software-smart of a set of programs for the robots, a PLC control for the welding jigs, feeder- and auxiliary systems, and two touch screens with

HMI & display functions. The integrated OEE system monitors all production processes via ie. the PLC. This means that all actions, ie. jig movements, open close operations etc. is logged, production time, stop time, waiting time if for example materials is missing, number of produced items and all vital production data is logged and used in the OEE system. Based on the data from the OEE system the operator or production supervisor can easily optimize the cycle time and eliminate unwanted stop and delays. In addition to the OEE system, a complete traceability system for logging part ID information and keep track of data related to the single CPG Pile Splice is integrated into the production line. This is to ensure that all parts used in the Pile Splices can be traced back to their origin.

www.centrumpaele.dk

 www.youtube.com/valkwelding: Multifunctional robot cell





Wielton implements major upgrading on welding line for bigger tipper bodies

15 YEARS OF SUCCESSFUL COLLABORATION BETWEEN WIELTON AND VALK WELDING

Wielton, the Polish manufacturer of trailers and semi-trailers for trucks, has increased its production by sixfold in the past 15 years, partially also by the use of welding robot systems. In that period, Valk Welding delivered 18 welding robot systems. The most recent delivery consists of an upgrade of the largest installations (installed in 2005) for the welding of sidewall plates and bottom plates and complete tipper bodies to the newest technology. Mariusz Skupinski, manager of the robot programming department at Wielton, tells us how the welding robot technology of Valk Welding has contributed to the realization of their ambition to expand.



Until 2004, Wielton manufactured 2,000 to 3,000 trailers/products a year, without the use of robotisation. Based on the increasing demand for their trailers, Wielton wanted to double the production at that moment, partially by the use of welding robots. For this project, the whole trajectory of analysis, concepts, and quotations were run through with several European suppliers. The owner (at that time) of Wielton, Mr. Krzysztof Tylkowski, chose Valk Welding and stated in 2006 after first projects were realised: "Valk Welding trusted and believed in the success of these investments from the beginning, and did not shy away from a collaboration with us."

FORERUNNERS

In 2004, Valk Welding delivered the first welding robot systems. In the period after that, 16 more welding robot installations and multiple licences for the offline

programming system DTSP followed. The welding robot installation is used for the welding of all possible components, from smaller subassemblies to complete chassis frames. The most impressive thing is the 45-meter long installation which Valk Welding delivered in 2005, with which all tipper bodies flat subassemblies can be welded, followed by XYZ system where complete tipper bodies are welded together in the special jig placed on 10 tons manipulator. All this „set“ is called W5-line. Mariusz Skupinski: "Wielton was far ahead for that time with that concept, and realized a large capacity expansion with that."

STRONG EUROPEAN EXPANSION

The Wielton group expanded significantly in the past few years in the local factory in Wielun. Moreover, the group expanded its activities even more in Europe because of the takeover of multiple companies in

the European market, among which the French trailer manufacturer Fruehauf, the German Langendorf, the Italian trailer manufacturers Viberti and Cardi and latest English company Lawrence David. The fast expansion made doubling the capacity of the W5-line in 2017 necessary.

UPGRADE OF THE W5-LINE

The existing W5-line consisted of a welding robot installation with a length of 45 m for the welding of sidewalls and bottom plates and a 17 m XYZ installation for the welding of complete tipper bodies. After a thorough examination for a couple of months, it was decided to divide and extend the 45 m system into two identical installations of 27 m and to equip one of those with two new welding robots. The upgrade of the 17 m installation for the welding of complete tipper bodies was also part of the plan.

SUPPLIER COMPARISON

Mariusz Skupinski: "Based on the evaluation of the possibilities of competitors compared to the technology Valk Welding offers, Valk Welding's solution was again chosen. The takeover of the other trailer companies where other solutions were installed, gave us the opportunity to compare. After a longer evaluation period of various methods and practical experience with the installations of other suppliers, we decided to continue the collaboration with Valk Welding. From the beginning, we were convinced that a project of this size would end in a successful result with Valk Welding." The upgrade was realized in the first half of 2018.

SEAM TRACKING FOR ALUMINUM PARTS

"With the realization of the upgrade, we are on perfect way to achieve our goal. The goal was stated as doubling the capacity of the W5 line on the same footprint. Today (Feb

2019) we are cca 8 months after upgrade was installed. Due to logistic issues around, we are not able to reach doubled production yet, but we are getting closer and closer. It is expected the goal will be reached during 2019. One of the most important things which made the capacity doubling possible is the use of the Valk Welding Arc-Eye laser sensor for welding seam following. With that, the problems with the accuracy and the welding quality, especially with aluminum parts, was drastically eliminated. Our experience with the DTSP offline programming software also made it possible to start the upgraded line in the shortest amount of time," Mariusz Skupinski continues.

Jakub Vavrecka, Valk Welding responsible for Central and Eastern Europe operations: "Valk Welding is proud to be part of the success of Wielton. I am honored to say we grew up together. The current production of the Wielton group is already 18,000 products per year,

which means the production has increased with a factor around 6 in the past 15 years. In the meantime, Valk Welding also delivered a complete chassis line with 8 robots to the French company Fruehauf, which now completely belongs to the Wielton group."

 www.youtube.com/valkwelding: Robotic welding at Wielton

WIELTON EDUCATION AT THE LOCAL TECHNICAL SCHOOL:

In 2014, Wielton decided to open a special class at the local technical school. The class was completely supported by Wielton, with the idea to educate youth for their own activities. Valk Welding supported this activity with the delivery of a complete robot installation for educational purposes.

www.wielton.com.pl

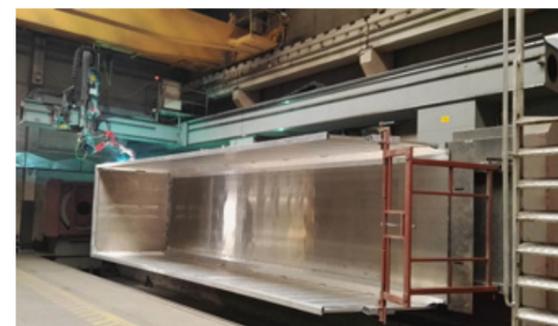


ARC-EYE LASERSENSOR

The Arc-Eye welding seam laser tracking system, developed by Valk Welding, is a complete solution based on its own laser camera solution, which follows the welding seam in real time during welding.

 www.youtube.com/valkwelding: Arc-Eye laser sensor

the Wielton robotteam: (from l to r) Mateusz Golec, Marcin Jagielnicki, Mariusz Bosiak, Mariusz Skupinski, Daniel Chodak, Mariusz Kinas, and Dominik Dlubek

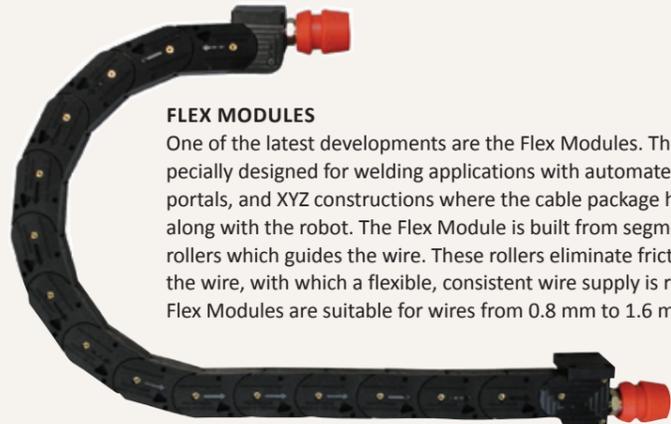




NETHERLANDS

Welding wire supplied on track without problems

With larger installations with the welding robot moving along a track, or when a gal-low construction is used, it is often desirable to put the drum with welding wire in an easily accessible location outside the installation. However, it needs to be possible to supply the welding wire over a longer distance without any problems. For this specific application, Valk Welding supplies wire feeding systems from the American manufacturer Wire Wizard, such as flexible cables, wire guide modules, and pneumatic wire dispensing support systems. Wire Wizard systems have already been used successfully in welding robot systems for more than twenty years in Europe.



FLEX MODULES

One of the latest developments are the Flex Modules. These modules are especially designed for welding applications with automated systems on tracks, portals, and XYZ constructions where the cable package has to be able to move along with the robot. The Flex Module is built from segments with ball bearing rollers which guides the wire. These rollers eliminate friction and resistance on the wire, with which a flexible, consistent wire supply is realized. The standard Flex Modules are suitable for wires from 0.8 mm to 1.6 mm ϕ .

WHAT MAKES THE FLEX MODULES UNIQUE?

Flex Modules differentiate themselves from systems that work with pneumatic feed assist system (such as PFA). Firstly, the Flex Modules are built from heavy, large bearings, with steel ball bearings instead of plastic rollers. Therefore, the wear and tear of the rollers is so low that the Flex Modules last longer. (Several years) The manufacturer can therefore give a three-year warranty to such a sustainable product. Secondly, another big advantage is that there is no compressed air needed, which results in a cost reduction.



BELGIUM

Van Hool is very satisfied with the Flex Modules

Van Hool the most leading manufacturer of industrial vehicles, busses and coaches, in Europe, uses 24 welding robot systems from Valk Welding. A large amount of those are equipped with the traditional pneumatic feed assist system (PFA), combined with the Wire Wizard wire cables. Pieter Ceulemans, responsible for the welding robots at the department of industrial vehicles, experienced in practice that if the PFA units are not adjusted in the right way, or that the settings are changed. "It will result in an overpowered PFA, with slipping feed rollers and a chance of damaged wires, or dust and dirt in the wire cable. This can lead to a wire supply which is not constant resulting in problems during welding due to misadjustment of the feeding equipment."

FLEX MODULES AS A TEST

As a test, the last delivered installation to Van Hool was equipped with the new Flex Module, combined with the standard Wire Guide Modules. As a result of that, the PFA on the drum was not needed anymore. "Beside the fact that there are no adjustments to be made in this system, it also has more advantages. Feeding in a new wire (end of drum cycle) is simple and can be done by hand which gives you the opportunity to check if the wire runs through the whole length correctly. There is no PFA installed above the drum anymore. This makes changing the drums with welding wires much easier, because there is more accessibility for placing the new drum into position. Also, the wire supply can be disconnected on several places and be cleaned," Pieter Ceulemans says.

FLEX MODULES CAUSE A CONTINUOUS PROCESS

In the new modular system, the wire supply consists of straight ends of wire cable, and curved feeding modules with rollers (Wire Guide Modules and Flex Modules). This limits friction and wear to a minimum. Only the wire cable on the robot arm is installed with bends, but since this a small distance, friction and wear are minimal. During the coming summer break, Van Hool plans to convert more of their current installations to this modular system.

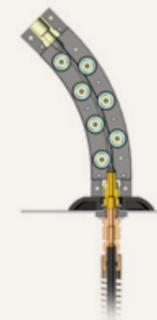
Pieter Ceulemans, International Welding Engineer and responsible for the welding robots at Van Hool



www.vanhool.be



Wire Guide Modules in a fixed setup, composed of modules of 45°



New catalog for Wire Wizard products



Valk Welding is the distributor for Europe of Wire Wizard, the number one program for friction-free feeding of welding wire from drum to robot. Last month, the new catalogue was published. This 2019 edition includes all existing products such as drum cones, flexible conduits, Wire Guide Modules and feeder connectors as well as the latest products like the new Flex Modules for tracks and shifters as described in this magazine on pages 22-23. The new catalogue also describes other new products such as the extended range of torch products and the latest version of the Weld-central system for weld-cell monitoring.

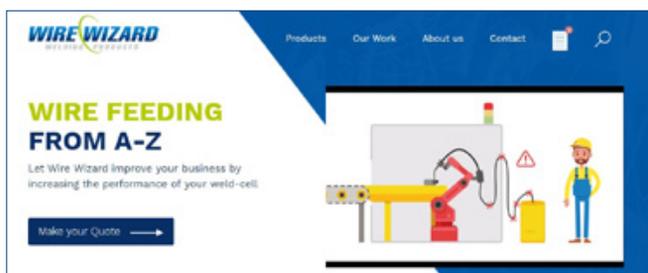


Are you curious about these novelties? Or looking for a clear overview of all that the Wire Wizard program has to offer? Please request the new catalog contacting our specialist Anne van Loon: avl@valkwelding.com or just download at: www.wire-wizard.eu



New userfriendly Wire Wizard website

Just recently, the new Wire Wizard website has been launched with additional product information and a more user-friendly layout for new clients. For visitors who are not familiar with the Wire Wizard program we developed a tool at the homepage which guides you in a few steps through the program and helps you to select the right set of equipment for your application. At the new website you can also find product dedicated pages of nearly all Wire Wizard products. At these pages you can find specifications like size, material, use, application and maintenance.



REQUEST YOUR QUOTE QUICKLY AND EASILY

The new site is also equipped with a quotation system to easily and quickly request a quote. This allows every visitor to easily collect all products of interest in a "request box" which can be sent in as a request for quotation. In order to ensure that the customer always orders the right products and no items are missing, the specialists of Wire Wizard supply the quotation with additional information where necessary.

www.wirewizard.eu

Tradeshows

Machineering 2019

Brussels, Belgium
27-29 march 2019

Brabantse Metaaldagen

's Hertogenbosch, Netherlands
10-12 april 2019

Vision, Robotics & Motion

Veldhoven, Netherlands
12-13 june 2019

TIV Hardenberg

Hardenberg, Netherlands
17-19 september 2019

HI Industri Herning

Herning, Danmark
01-03 oktober 2019

MSV Brno

Brno, Czech Republik
07-11 oktober 2019

Sepem Industries

Angers, France
08-10 oktober 2019

Welding Week

Antwerpen, Belgium
19-21 november 2019