



VALK MAILING

a publication of Valk Welding

22th year - 2022-2

***“Second system
in production
30 min after
commissioning”***

NC Engineering



Colofon

‘Valk Mailing’ is a six-monthly publication of Valk Welding that is sent free of charge to all of our contacts. Would you prefer to receive a hard copy of this publication? If so, send an email to: info@valkwelding.com

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Dear reader,

With the end of the year 2022 already approaching, it is a pleasure and delight to present to you the second Valk Mailing of this year.

This year has been another very exciting one. With our development of the VRPS (Virtual Robot Programming System) we have received the Panasonic Cross-Value Award within the complete Panasonic group worldwide, which is not only a first in our existence but also a very big honour for us. This is the incredible result of our large investments with our own people in the field of new software developments.

Our ever-growing lead in the field of flexible welding robot systems and our high-quality welding wires, that are deliverable from stock have, at the time of this publication, already ensured a new record in both order intake of welding robot systems and welding wires. And also, in turnover we are heading for a new record.

Besides our new branch in the Czech Republic, which is already running at full speed, a new assembly hall is being built in the Netherlands, specially designed for the increasingly larger welding robot systems to meet the increasing demand. It is also being built to create space for the small compact robot systems for the companies who are taking their first steps with flexible Valk Welding robots. Also, our team of enthusiastic employees is further expanding and there are interesting vacancies for all branches which can also be consulted via our website. Both inside and outside Europe, the prospects are very favourable, and we hope that you, like us, may end this year very successfully.

Besides a lot of inspiration, we wish you a lot of fun with this edition!

Peter Pittomvils (CCO Valk Welding Group)





At Meijer Metal, the welding robots continue to produce unmanned at night

When the employees at Meijer Metal in Sint Jacobiparochie, Friesland, start their workday in the morning, the welding robots have been producing all night long. Four welding robot cells are loaded and unloaded 24/7 unmanned by AGVs. In doing so, the company is building the factory of the future, in which much of the handling will be automated. “We have been able to shorten the lead time with this and we have been able to say goodbye to shift work with the robots,” explains Reinder Hoekstra, COO of Meijer Metal and Meijer Handling Solutions.

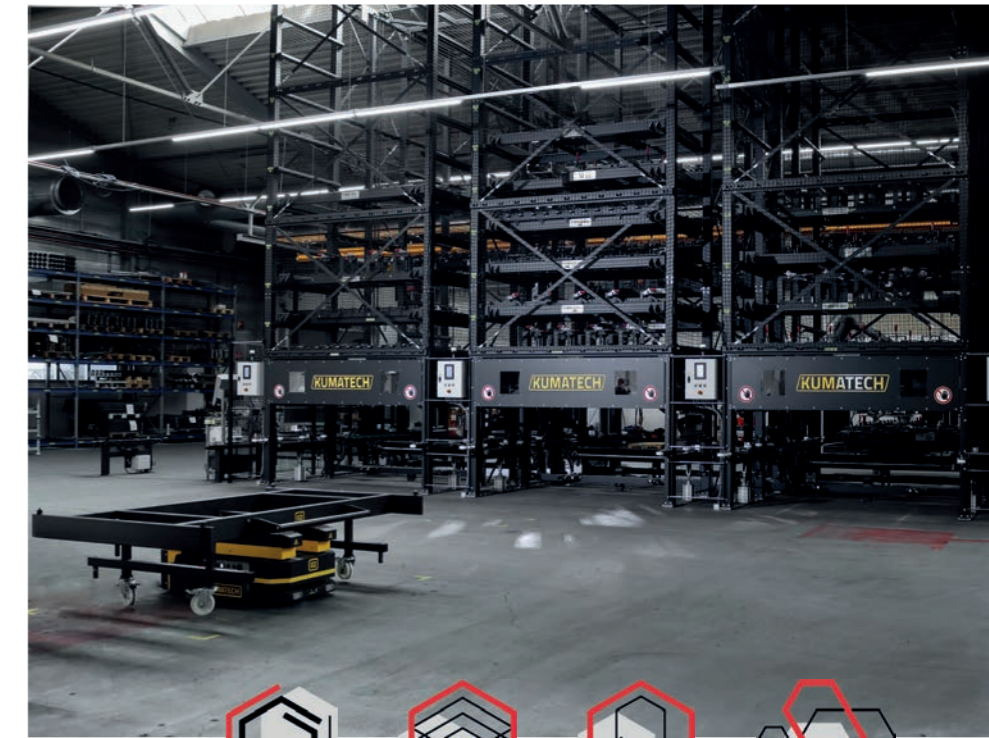
Meijer Metal is among the larger suppliers of metal products in the Netherlands, with approximately 175 employees. “It is not our ambition to be the biggest, but to be the one that can supply products with high quality and high delivery reliability at a competitive price. Thanks to our scale, we can serve our customers broadly and are able to grow with them.”

Automate welding production flexibly

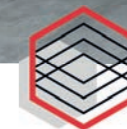
Reinder Hoekstra: “Within our idea of the factory of the future, we prioritized the welding department because that is where we can add a lot of extra value and where the replacement demand was the highest. New welding robots do increase efficiency, but an operator still needs to be present to load the robot. We wanted to go a step further by also automating the logistics part with AGVs. In addition, we wanted to get rid of the shifts, so that we can have our employees working only in daytime shifts. We looked at how the automotive sector does it, but that is too inflexible for us. We want to be able to weld all products together and also in varying series sizes”.

Welding robots, AGVs and storage

“For the concept we had in mind, we approached several parties. Kuunders for the AGVs and Valk Welding for the welding



CMRS



DTPS



QPT



SFC

robots came to the forefront. Both have worked together before, and both showed the commitment to work with us. Moreover, both suppliers are well advanced in the development of their software, which makes it possible to offer the right program to the robots together with the products to be welded. We ourselves took care of the communication between ERP and TMS (the transport management system of Kuunders), in which it is specified what has to be welded where with what priority. Valk Welding supplied the software tools with which we make the welding programs (DTPS), can search and scale them automatically (QPT) and Shop Floor Control software (SFC).”

No more hands at the welding robots

During the day, the parts are stitched, stretched in the mould, and placed in a storage tower. Around the clock, AGVs (Automatic Guided Vehicles), equipped with a product carrier, pick up the products from the tower, drive them to one of the available welding robots and place the product carrier with parts in the workstation. The robot then welds the parts. While one AGV removes the welded parts from the welding robot, another AGV is already bringing the next product carrier with pre-sealed parts. In this way, four welding robots and four AGVs work unmanned 24 hours a day.

Intelligence is in the robot

With Quick Touch Sensing (searching with the welding

wire), the robot searches where the product lies, probes the length and width dimensions, whether the product fits within the program’s bandwidth and whether the jigs are closed. “This way we weld parametrically and control everything, using the intelligence of the robot and we don’t need expensive jigs,” explains Reinder Hoekstra.

Redundancy

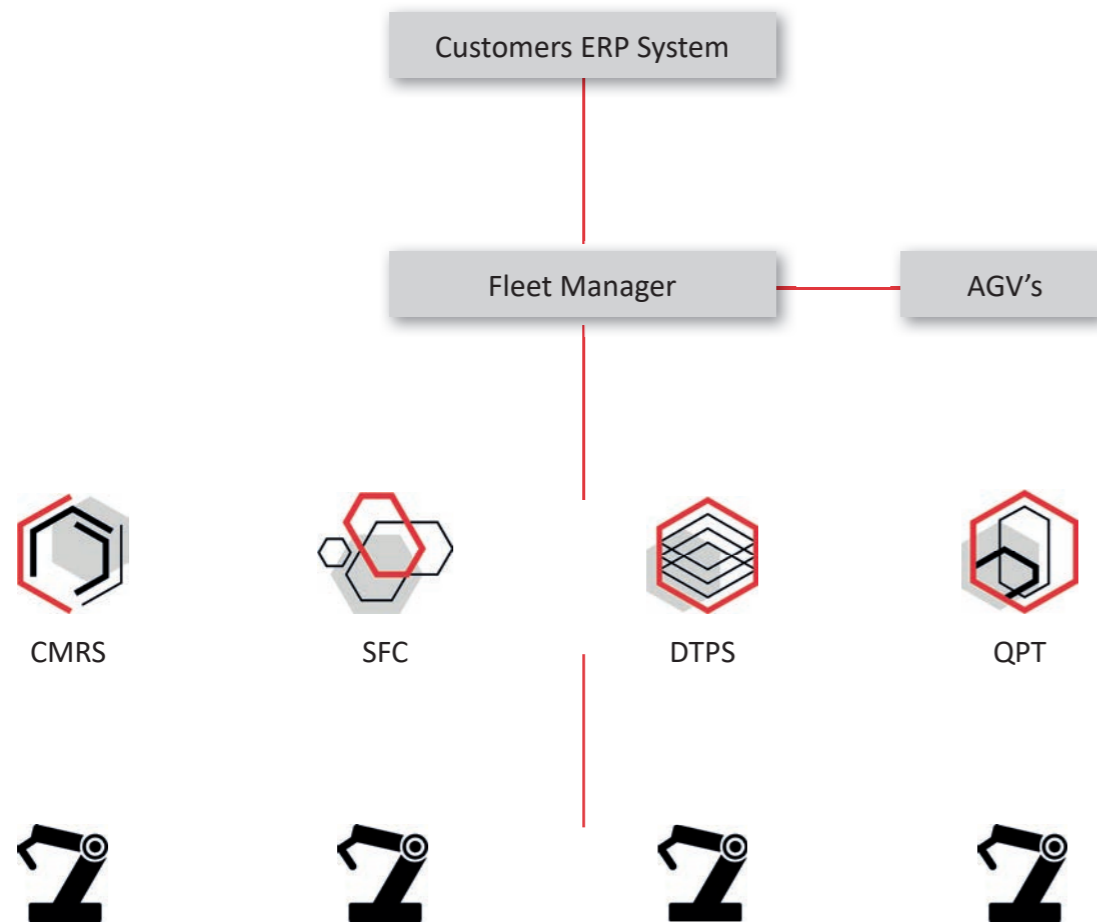
From the beginning, Hoekstra set the requirement that production should not come to a halt when one link fails. “As soon as that happens, the rest must be able to continue working. It is therefore important that the redundancy* is in order. If one welding robot breaks down, the other welding robots take over”.

More work with the same people

“The automation has not saved us any FTEs, but it has enabled us to do more work with the same number of people. The challenge is to keep the supply and demand for preheating in balance. It is still quite a puzzle how many employees you need to deploy in order to stitch a sufficient number of parts and to have them ready in the storage towers.

Now that we have realized our idea in the welding department, we also want to roll it out to machining and bending.

www.meijer-group.com



Automate, structure and manage the welding process

Based on the lean and mean philosophy, more and more companies are looking at where the production process can be organized even more efficiently. For the welding process, this means, among other things, reducing programming time, unmanned deployment of welding robots, linking the production to ERP systems, increasing the uptime of welding robots and monitoring and adjusting the welding production. In order to meet this demand, Valk Welding has developed several software solutions in recent years, which enable customers to automate, structure, manage and optimize the welding process.

Data exchange between the office and production environment

forms the basis for the development of software tools that enable both machines and robots to do their work with as few actions as possible. Customers therefore want to be able to control production from their ERP, so that programmers from the work preparation can determine to which robot they want to assign a welding program and communicate directly with the operator on the shop floor.

Shop Floor Control SFC

Valk Welding therefore supplies SFC (Shop Floor Control); an application that automates, structures and manages the robotized welding process. SFC automates the process from planning to operator instructions. The platform uses the ability

of the Panasonic robots to request and send live data. For example, the operator scans a code at the robot installation to automatically provide the robot installation with the correct and most recent set of robot programs. But this code can also be read automatically by the robot when it is, for example, on the welding jig.

SFC runs on a separate Robot Object Server (ROSE) and thus provides both the management of the factory control, as well as a structured workflow and the automation of program management between the office and production environment.

Accelerate programming time with QPT

After more than twenty years of experience and further development of offline programming of Panasonic welding robots with DTPS, the software engineers at Valk Welding have developed QPT (Quick Programming Tool) to further simplify programming and further reduce programming time. Especially when programming products within the same product family, it is desirable not to have to reprogram the same program blocks for each variant. With QPT, Valk Welding offers a macro module within DTPS, with which you can copy, scale, multiply and combine existing program blocks with other program blocks. In this way, you do not have to reprogram every recurring operation.

QPT is part of the entire ARP (Automatic Robot Programming) program of Valk Welding under which other software developments also take place. There are already solutions to generate fully automatic robot programs from a 3D CAD file. More about this soon.

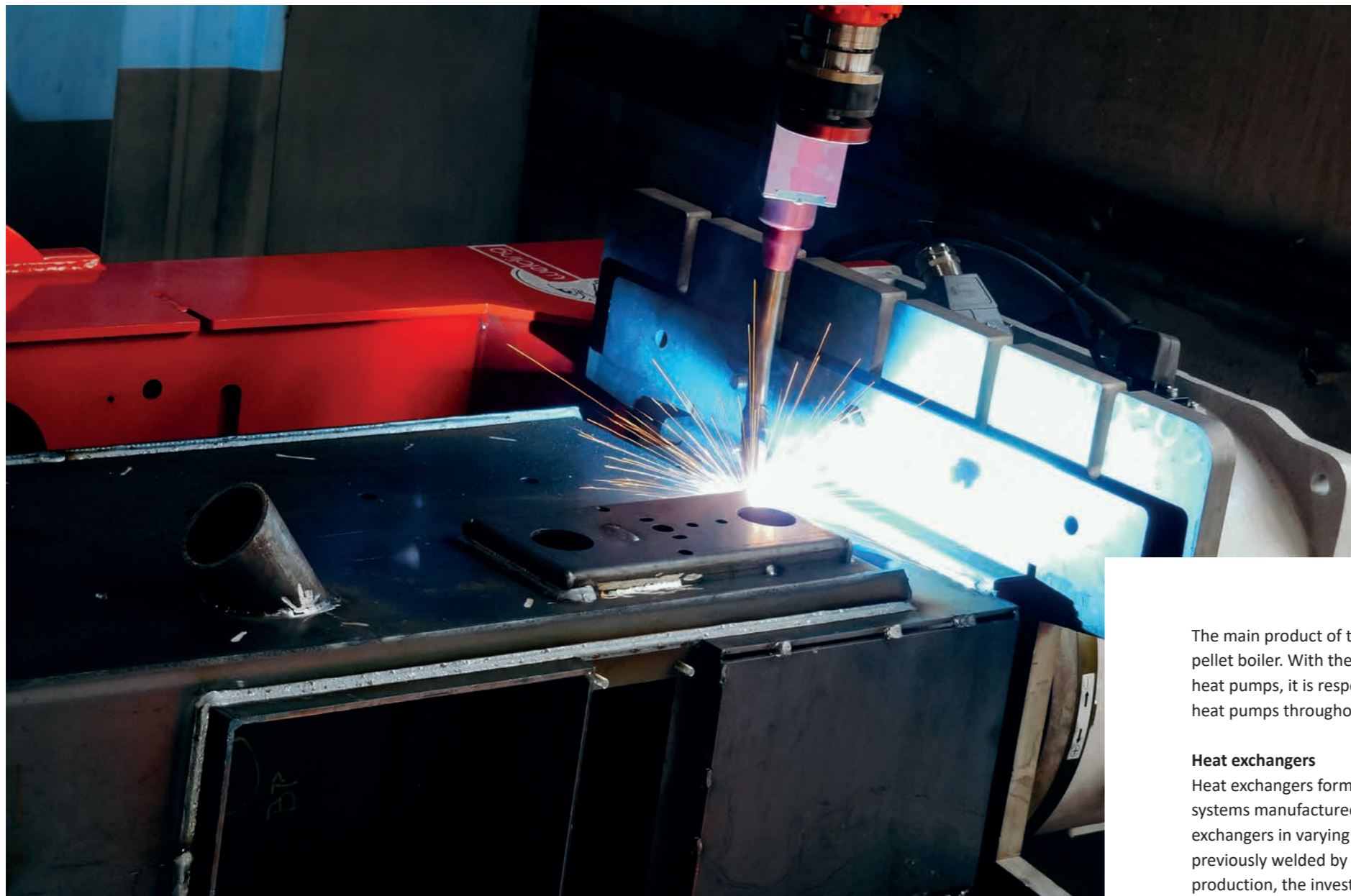
Monitoring and adjusting the welding production with MIS

Companies that have several welding robots at their disposal want more and more insight and control over the performance of the welding robots, the process and maintenance. Valk Welding has developed MIS (Management Information System), which visualizes the data from the robot controllers in the form of graphs and tables. In this way, it is possible to record over a certain period of time how long a robot has been stationary and whether the cycle times correspond to what has been calculated.

By using this information to adjust the welding production in time, the uptime of welding robots can be increased and everyone, from the shop floor to management, has insight into where the process can still be optimized.

MIS (Management Information System) also runs on a separate server ROSE (Robot Object Server), and can be used both separately and simultaneously with SFC (Shop Floor Control).





“We are also very satisfied to cooperate with Valk Welding. If a new demand arises, we will certainly work with Valk Welding again,”
- Marcin Lazar

Welding robot enables increased production at heating equipment manufacturer

By applying modern technology, the Polish manufacturer HKS LAZAR is leading the market in boilers and heat pumps. With the investment in a Valk Welding robot, the company has been able to increase both production and sales. To further increase production capacity, HKS Lazar invested in a second robotic welding system. “The first welding robot from 2017 was already fully loaded. A second gives us the opportunity to grow with the increased market demand for our products,” says co-owner Marcin Lazar.

The main product of the family company HKS LAZAR is the pellet boiler. With the development and construction of heat pumps, it is responding to the growing demand for heat pumps throughout Europe.

Heat exchangers

Heat exchangers form an important part of the heating systems manufactured by the company. The heat exchangers in varying capacities and dimensions were previously welded by hand. “In order to increase production, the investment in welding robotisation was a necessary step. The welding robot guarantees high consistent quality and high repeat accuracy,” Marcin Lazar explains.

Finding welding spots

“Due to the fact that steel deforms during welding, we had doubts if the welding robot could cope with such deviations, which a manual welder has no problem with. With the Touch Sensing technology Valk Welding had a solution for this, which has been successfully applied in many of their systems. With this advanced welding wire touch finder system, it was also possible to use a very simple welding jig to attach the boiler to the manipulator. The jig fixes the base of the boiler to the turntable disc with only four clamps, allowing excellent robot access to the rest of the boiler/exchanger (uncovered by complex tooling).

Single station welding robot installation

Valk Welding supplied a single-station welding robot installation in which the heat exchangers can be rotated in all possible positions on the L-type manipulator, giving the welding robot optimum reach into the inner and the outer shell of the exchanger. Due to the long cycle time and the short changeover time (changing parts on the L-manipulator), one workstation is sufficient - a second station would not give more output.

Using “old” programs on a new workstation

Thanks to the precise calibration of the Valk Welding workstations, it was possible to start full production on the new robot as soon as the new workstation was installed. We could upload all the programs from the first robot to the new one, which was a huge production acceleration for HKS Lazar. “This is a great advantage of the Valk Welding systems.”

Satisfied with the collaboration

“When we look back over the last five years, the welding robot has enabled us to increase production and sales, which has had a positive impact on the company’s growth. We are also very satisfied to cooperate with Valk Welding. If a new demand arises, we will certainly work with Valk Welding again,” says excited co-owner Marcin Lazar.

www.hsklazar.com



Second system in production 30 min after commissioning

Northern Ireland-based machinery manufacturer NC-Engineering started robotic welding in 2018. Since then, the company has welded over 7,000 assemblies on their Valk Welding robot system. To further expand capacity, NC-Engineering invested in a second system this year for smaller repetitive jobs. “We were able to use the second welding robot system within 30 minutes after commissioning, thanks to good preparation in DTPS and quality fabrication of the welding jig,” says process engineer John Johnston.

High mix – low volume

To produce machines for the agricultural and construction sectors, the company has programmed 77 different assemblies on its first TRACK-FRAME-E welding robot system. This system has two side-by-side workstations with a clamping length of 3.5 meters each, and a Panasonic TM2000WG3 welding robot mounted on a track. “Where one product is welded in 1 minute, another requires 150 minutes of welding time. Our programmer David has programs sent to both stations and the loading operator can choose which station to place the fabrication on. That way we can distribute the workload equally.”

It starts in DTPS

The second welding robot is a FRAME-H system and has a simpler layout for welding smaller repetitive workpieces, ensuring that they are welded optimally. “We received the layout in for the second installation in advance so we could prepare new jigs and programs in DTPS ready for the arrival of the robot. Some jobs that we had welded on the first installed welding robot we might transfer to the second one. By now we have enough experience to see what fits and what doesn’t. For this smaller robot, we are still expanding the job capacity, with 8 jobs already prepared and another 14 currently being planned and designed,” says John Johnston.

Further automation?

“As the number of welders entering the trade seems to be decreasing in recent years, the movement toward automation will continue across the industry and not only in our company. For welding automation, Valk Welding is our partner. In my opinion, they are the experts in this field, which is reflected in a high up-time. And whenever I have had problems or needed spare parts, I was helped immediately.”- John Johnston

www.nc-engineering.com



DTPS



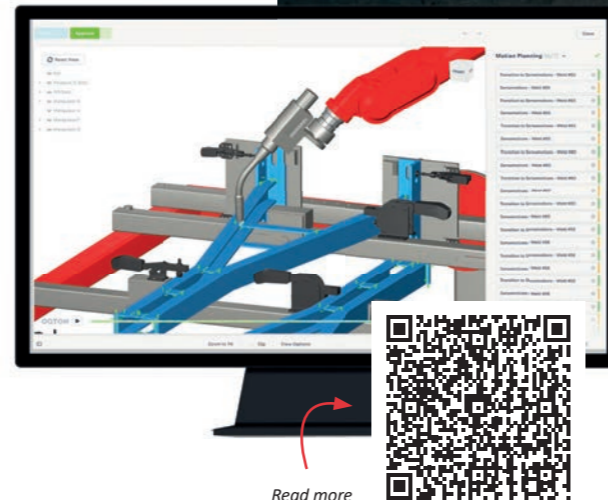
Automatic Robot Programming (ARP) from 3D CAD Models

The new tool should drastically reduce the time from design to welding program. Together with various partners, Valk Welding is continuously developing solutions to further automate the programming of their welding robots. “Our dream is to be able to generate programs for welding robots as simply as possible, using input from the expert knowledge of the welding robot experts. But how to capture a good weld in CAD and who does that at what stage, there is no clarity on that yet,” states Adriaan Broere, CTO of Valk Welding. Nevertheless, Valk Welding is making great strides with the development of Automatic Robot Programming (ARP), which uses all design and engineering data that is captured in a 3D CAD model with Model Based Definition (MBD). Machining programs generated from a Model Based Definition built 3D CAD model is already used in machining and sheet metal processing and also offers opportunities for welding automation.

The fact is that the use of 2D drawings for communicating to the production environment is increasingly being replaced by product engineering in a 3D environment. The advantage is that from the current 3D CAD systems all geometric data is recorded in the STEP files. With the latest STEP AP242 standard, it has also been determined how best to manage information such as tolerances in a 3D environment. “Nevertheless, STEP does not yet contain all the necessary welding data needed to generate a welding program fully automatically,” explains Adriaan Broere.

Step further

“At that point we started working together with TFH Technical Services, among others, a partner who has already developed a package to be able to collect and export 3D welding data to a STEP file and a separate file containing the welding positions, angles and the required A-values. These two files together therefore contain more data than a ‘normal’ STEP file,” Broere explains. “During the export, the thickness, the curve, and the normal vector of the outside of the weld are recorded for each weld, as well as the path that the welding arc must follow. We use the Automatic Robot Programming (ARP) module to read in the complete information, i.e., both the product design and the weld assemblies. The ARP module



New: Oqton also part of ARP



uses simulations to check for weldability and automatically generates the welding robot programs. With that, the welding information can be automatically translated from design to welding program. However, before we can properly process this for all types of workpieces and welding processes 100% automatically, we still have a nice development path to follow. Soon we will come out with a first big step that uses “machine learning” but more on that soon.”

Adding welding knowledge

According to Adriaan Broere, who has been heavily involved in the development of offline programming of Panasonic welding robots for more than 25 years, the question remains who takes responsibility for capturing the welding data. “Is that the CAD engineer or the welding robot programmer? And who has the most welding knowledge at that point? Therefore, in my opinion, it is still necessary to conduct a check in the final stage. You will continue to need the DTPS application to make the translation to the welding robot and to do the often-necessary final fine-tuning. In it, you always work within a calibrated environment and can link to Shop Floor Control and

other applications from the Valk Welding software suite.”

Quick Programming Tools (QPT).

Automatic generation of programs for the welding robot was previously possible for products within the same product family. By working with parameterized models in which the geometric data as well as the welding geometry and welding parameters are stored, you can create a program for the welding robot within a few clicks for any size. Adriaan Broere explains, “From 1 basic model you can export all geometric and parametric data and adjust the building blocks using Quick Programming Tools (QPT is developed by Valk Welding). Several users of our systems with their own parametrically built products work according to that concept and thus reduce the programming time to almost zero, because a lot of repetitive work during programming is automated.”

This route is used daily by existing customers as well as in new projects, because in many cases it will lead to a 100% automatically generated program and enable single (unique) piece flow on a welding robot.



**FM Bulk
Handling**
FJORDVEJS



Welding robot works for 3 men

Although the company has no shortage of skilled welders, FM Bulk Handling, the Danish manufacturer of chain, screw, and belt conveyors, decided to make the move to welding robotization in 2019. Increased efficiency and consistently high welding quality were behind that decision. “In addition, it will make the working environment for our employees a lot healthier and safer,” says CEO Jeppe Bergmann Rasmussen.

In addition to chain, screw, and belt conveyors, FM Bulk Handling also builds elevators, bins, weighing systems and ship loaders for transporting fish feed, fish meal, pellets, grain, cement, and so on. “As long as it concerns dry materials, we can supply the systems that allow materials to be transported in a safe and clean way.” The systems are suitable for 24/7 use and are very solidly built. FM Bulk Handling has therefore built up a reliable name worldwide in the world of transshipment of dry materials.

Heavy work

Screw conveyors are the fast runners in FM Bulk Handling’s delivery program and form the product group where the manufacturer wants to further improve the efficiency in their production. Particularly the welding of the screws from

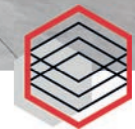
“We talked to several providers, with Valk Welding standing out in terms of programming and their complete system specifically developed for welding robotization.”

- Jeppe Bergmann Rasmussen

steel and stainless steel is, partly due to the length and complexity of the product, heavy work for the welders. For this reason, the company wanted to do the welding of the screws and housings with a robot. “We then started looking for a robot integrator who could supply a system that can do the job for a long time,” explains Jeppe Bergmann Rasmussen.

Valk Welding

“We talked to several providers, with Valk Welding standing out in terms of programming and their complete system specifically developed for welding robotization. In addition, they produced a good concept and already had more experience building welding robot systems for our sector.”



DTPS

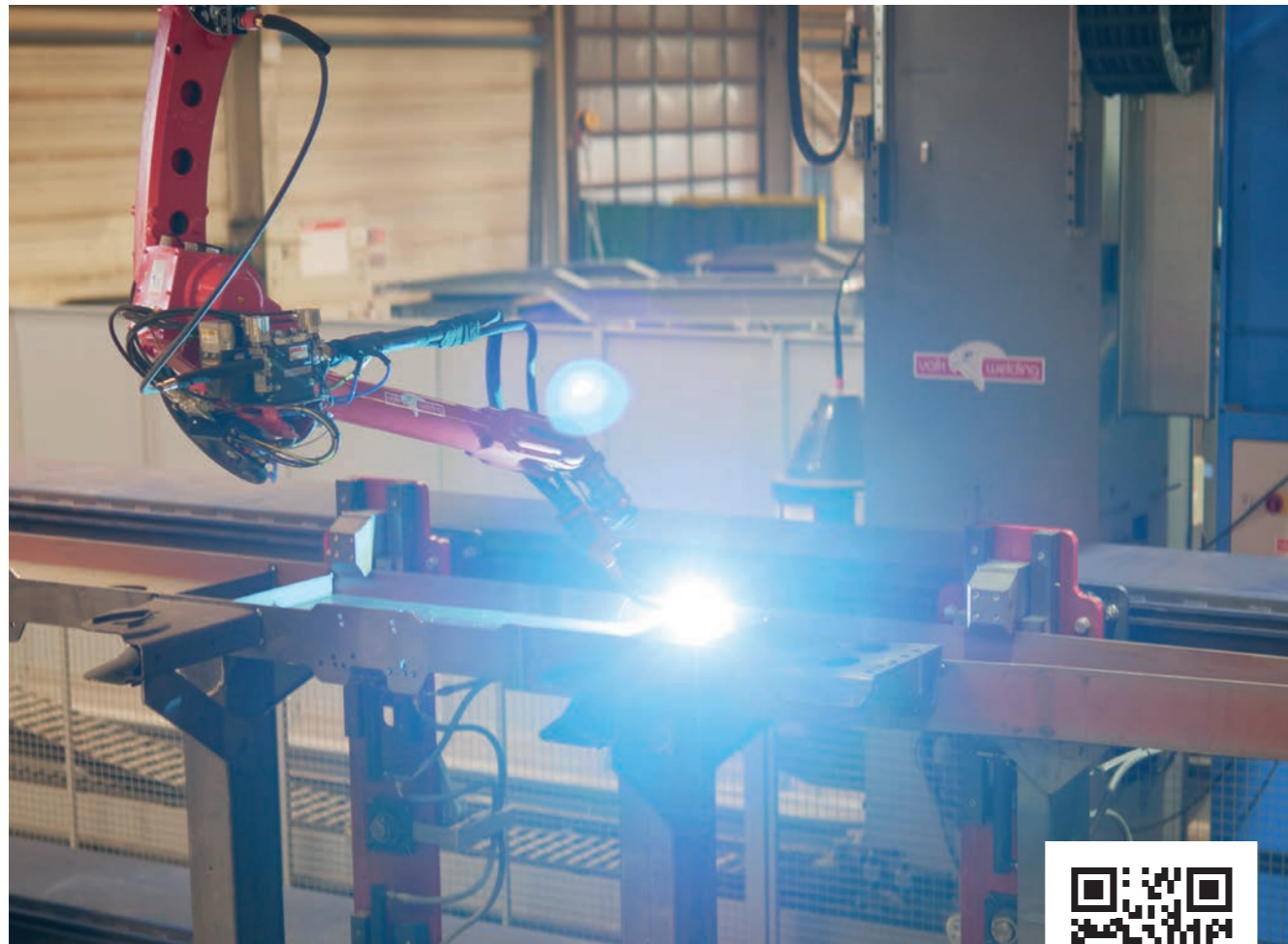


QPT

Robot runs 8 hours a day

The welding robot system from Valk Welding equipped with two workstations, is now running 8 hours a day without any problems. “The robot does the work for three men and also does it more accurately and efficiently. Full time, 1 to 2 employees are occupied with the welding robot and the programming. Valk Welding DK have extensively trained us. We weld single pieces and small numbers with small variations, which we can change quickly partly due to the programming with macros (QPT). When we standardise more products we can weld more on the robot and we will have to expand the capacity further,” foresees Jeppe Bergmann Rasmussen.

www.fmbulk.dk



Watch the video

Reisch invests in modern machinery

When we see the columns of trucks on the highways, hardly anyone thinks about how complex the production of commercial vehicles can be. The company Martin REISCH manufactures truck bodies, tipping bodies, chassis and subassemblies for trucks and agricultural vehicles in Eliasbrunn. Reisch has supplied more than 155,000 vehicles in over 69 years and currently has 220 employees who produce about 1,100 trailers annually for the agricultural and commercial vehicle industries.

Increasing demands have led Reisch to continually invest in modern machinery and recently started working with a welding robot system from Valk Welding.

For this project, the task was not only to find a welding solution, but also to integrate the welding robots into an existing building. The low height of the production hall presented a demanding challenge, as the end products had to rotate around their own axis. The robotic system has 2 robots mounted upside down on their own gallows with a track length of 33 meters, so that assemblies of up to 12 meters long and 3.5 meters wide can be processed.

On one track, two individually programmable welding robots (hanging) were placed, which work in the 2 workstations autonomously to weld parts such as containers for dump trucks or chassis for trucks. The relatively low working height placed high demands on

the mechanics and on the corresponding welding fume extraction systems. A special construction was developed for this purpose so that the two robots could operate together on one station. Electrically, the welding fume extraction unit is connected to the robot, i.e., the robot takes over the control as soon as necessary. The extraction unit automatically receives a command, increases the starting speed and only then is the arc ignited, so that the resulting welding fumes are immediately extracted. Intelligent control of the welding fume extraction is thus ensured across the board.

Marco Beyer, plant manager at Reisch Eliasbrunn, is impressed by the overall efficiency of the system and can focus his attention on surface treatment thanks to the consistently high welding quality. In a multi-stage machining process, vehicle parts are sandblasted after welding and then subjected to a primer dipping process. Afterwards, all parts are subjected to a high-quality 2-component paint finish, which is used in both vehicle divisions. The circle is complete once the finished vehicles are on the road.

www.reisch-fahrzeugbau.de



A welder wants a robot



At his request, a hand welding specialist working at OLEXA® is having a robotic system support him to perform certain repetitive complex tasks that are too difficult, too long, too hot, and too tiring for him to perform on his own.

Founded in 1927, OLEXA® is a family-owned company specialising in continuous presses. It has more than 2,000 machines in operation in 50 countries in Europe, America, Asia, and Africa. In the boiler shop, an expert welder wanted to be replaced by a robot capable of performing long and heavy tasks.

OLEXA® (45 employees and €8 million in sales) designs and manufactures oil and grease extraction systems and other special industrial applications at its 4,000-square-meter plant in Arras, France. Briefly, oil extraction consists of processing oil seeds (rapeseed, sunflower, flax, soybean, cotton, hemp, peanuts, etc.) to extract the oil. OLEXA®

provides turnkey units from seed receipt to storage of the finished products (oil and cake).

The conditioner is an essential preparation before oilseed pressing and dehydrates the material to be processed. The seeds are continuously spread and stirred on a tray and are heated and mixed at several coupled levels (from 3 to 12 trays per conditioner). Each circular tray contains a double skin in which dry steam circulates between 150° and 160°C under 6 to 8 bars. At each stage, a blade stirs the seeds.

The construction of these boilers is complex as each bin, 16 mm in diameter, is lined with a 12.5 mm thick plate. This is pressed at the perimeter and has several 70-mm-diameter conical lugs distributed under the heating surface. These 25-mm lugs serve as spacers between the two plates. Conditioners with a diameter of 3.7 m require about 110 spiral or “slag” plugs to connect the plates.

“Previously, our welder made each joint in five minutes, which required four days of work for a large bin in difficult physical conditions. The operator was overwhelmed by these repetitive tasks, with difficult to maintain ergonomics and difficult thermal conditions, despite the protection provided. At his request, this work is now done by a robotic installation.” said Guillaume Wartel, production manager at OLEXA®.

Designed by Valk Welding, the welding robot installation combines a TL-1800WGH robot with an integrated 450A welding power source and a programmable rotary manipulator with a 5-ton capacity. The cell completes each spiral weld in four and a half minutes, or the 110 welds on a large plate in eight and a half hours with an effective duty cycle of 97%.

“At the beginning of the cycle, the quick touch system

which runs through the welding wire, locates the position of each weld to the millimetre,” he continued. “We are known for the quality of our conditioners, and some have been in use for more than four decades. There is no doubt that this brand-new robotic installation will enable us to maintain this quality in the long term,” concludes Guillaume Wartel.

www.olexapress.com



Welding robots drive line production at Renson Outdoors

Renson is a manufacturer of high-end patio covers, wall cladding, screens, and ventilation systems. Within the product range, terrace coverings form a strongly growing product group. Recently Renson invested in a completely new outdoor experience centre with a new production site. In order to meet demand, the company has fully automated the production of the roof slats for its canopies. Valk Welding was involved in this from the beginning where, through intensive cooperation, eventually two fully automated production lines were realised with which the high-quality requirements of the manufacturer could be met. "That should be enough to cope with the growth over the next four years," says Engineering Manager Jeroen Caen.



Production at Renson, originally specialised in the processing of aluminium profiles, was, as far as roof slats were concerned, divided into cutting the profiles to length, brushing them, and attaching drainage profiles to the ends of the roof profiles using spot welding. Until previously, these were three separate manual processes, which Renson Outdoor wanted to integrate into one automated line. The idea behind this was to greatly reduce branch time, increase output, and improve quality.

Switch to arc welding

That was also the starting point for the switch to arc welding. "A new technology within our company, but with more possibilities in terms of range and a more beautiful, consistent and qualitative welding result. Valk Welding first conducted extensive welding tests for this, among other things to assess the feasibility of the project," explains Jeroen Caen. This led to the delivery of a first welding robot installation in 2018, with a Panasonic welding robot on a track welding the drainage profiles to the roof lamellae. Valk Welding also realised the handling of the drainage profiles and supply of the profiles for the roof lamellae.

Compensating bending and torsion of the profiles

Jeroen Caen continues: "The fact that aluminium profiles bend and torsion slightly

by themselves posed the necessary challenges when positioning the welding robot. Too much torsion inevitably leads to failure. To prevent this, Valk Welding went looking for solutions to compensate for these deformations. Intensive and constructive cooperation from both is very important in such a process to achieve a successful end result."

Further reduction of the branch time

"With the experience gained from the first line, a concept for a second line has now also been developed, in which the welding robot also controls the sawing and brushing machine. Moreover, the decision was made to deploy 2 welding robots so that both ends can be welded simultaneously. With the installation of this line this year, a 50% reduction in branch time has been realised, which has enabled Renson's capacity requirement to be met."

Higher level

"The process of welding the drainage profiles is now far optimised and fully under control. Despite the high complexity of the lines, operation is simple," is Jeroen Caen's experience. "Multiple operations are completed at different speeds in a continuous process. Supervision with the necessary technical background does therefore remain necessary."

www.renson-outdoor.com



DTPS

105 metres of efficient welding of chassis frames

Kögel s.r.o. from Chocna in East Bohemia, part of the Kögel Group from Germany, is a long-time user of Valk Welding robotic welding solutions.

The largest project implemented within this long-term partnership was the design, manufacture, installation and commissioning of a complete welding line for the welding of trailer chassis frames, which are then used for production throughout the Kögel Group.

The project was implemented in 2019-2020, with the line being commissioned in fully automatic two-shift operation during the summer of 2020.

The need for more frames

"After the start-up of the line and the gradual debugging of all downstream processes, which corresponded in addition with the gradual further recovery of demand after the pandemic period, it became apparent quite quickly that the idea of keeping the project modular (i.e. relatively easy to expand) proved to be very sound," mentions Aleš Hájek, Production Manager at Kögel Choceň and adds: "During the first months of 2021, Kögel increasingly started to consider expanding the line with an additional welding station and the final decision was made in May 2021."

The expansion of the line

As the concept chosen when designing the original line proved to be correct and functional, following this decision, Valk Welding was able to embark, together with its suppliers, on the expansion of the entire line with a total of three additional welding robots installed in a copy of the previous two welding stations. The routes of the transport system were extended and modified, bringing the total length of the entire line in the new configuration to a total of approx. 105 m



Installation and commissioning

"An important requirement, even with such a major modification of the production line, was to minimize as much as possible any interruption to production, which is absolutely crucial for the entire Kögel Group," says Aleš Hájek. The transport systems were therefore modified during the four-day Christmas shutdown. This step made room for the installation of a welding station, which, however, took place while the line was in full operation.

Programming

Since the original line was already tasked with producing approximately 30 frame types (thousands of lines of code for each of the three robots), where each of these types must be able to be welded on any workstation, it was absolutely critical to choose the appropriate approach to create and maintain all welding programs for the original six robots and, in the new configuration, for the nine robots. Based on experience, Valk Welding chose an appropriate combination of calibration of individual stations and robots, use of off-line programming and

solutions to eliminate inaccuracies. The result is a system that allows the identical program to be used on any of the nine robots, while automatically correcting any possible deviations and inaccuracies in production preparation and possible geometric differences between the stations. This approach has enabled the added station to be fully integrated into standard operation very quickly."

Capacity increase

Vladimír Ropek, director of Kögel in Chocni, says: "The modification of the line, which was carried out for us by Valk Welding, went completely according to plan and brought the desired increase in capacity, so that we are now able to produce around 80 trailer frames per day within this facility. As the cooperation with Valk Welding has again met our expectations, we are currently working on three other projects that will lead to more efficient production of our frame components. We expect these projects to be completed in the first half of 2023."

www.koegel.com



Deployment of welding robots fits everything under a one roof strategy



The deployment of welding robots plays an important role in production at JAZO Zevenaar. Since the commissioning of the first welding robot in 2013, the company has gained a lot of experience with welding robotization, and many more products have been made suitable for the robotic welding process. Many elements and accessories are now welded on welding robots in a series starting at 20 pieces, which allowed that process to be automated to a large extent and this helped to relieve employees of monotonous work.

JAZO Zevenaar, leading manufacturer of design cladding for technical areas for residential and commercial construction, is

a highly automated company that combines all aspects of engineering, production, and assembly under one roof. ERP, CAD, CAM, and calculation are extensively integrated, which enables JAZO to produce competitively. For this JAZO has invested heavily in IT and HBO highly trained employees in work preparation. "With this we have an in-house engineering office, with which we can advise and assist the customer right from the design stage," says Managing Director Henry Aaldering.

Produce project-specific facade elements

In order to provide technical spaces with doors and ventilation grilles both functionally and aesthetically, JAZO supplies 3 different facade systems from simple to high safety, which are custom made for each project. Both the welding robot and the lasers, press brakes and milling machines are programmed directly from 3D models, so that the work can be done completely paperless. The welding robot, which moves over a track and operates 2 workstations, can be used for longer products.

Large series

Also, within the supply branch, which is part of the JAZO group, fixed product groups are produced, including parts for charging poles and electric vehicles. For this, JAZO was looking for an additional welding robot with 2 workstations that could be incorporated plug&play into production and could be delivered quickly. "Valk Welding was able to deliver a standard H2500 system within 2 months that we use for welding smaller products in larger series."

www.jazo.nl

Tradeshows
2023

Sepem Industries, Douai
24.01 - 26.01 (FR)

Machineering
29.03 - 31.03 (BE)

Mix Noordoost
10.05 - 11.05 (NL)

Schweissen & Schneiden
11.09 - 19.09 (DE)

www.valkwelding.com