



# VALK MAILING

a publication of Valk Welding

23th year - 2023-1

***“Halving the  
production time  
of LAG Trailers”***

LAG Trailers



Colofon

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Dear reader,

We are proud to present to you the latest edition of our bi-annual magazine The Valk Mailing. In this edition we share some recent projects we have realised in multiple different countries. Besides arc welding, we introduce you to robotic plastic welding, which is an important extension of our services.

At Valk Welding we never stand still, and we are constantly expanding our capacity to serve our customers even better. For example, at the end of last year we purchased new premises in Denmark to facilitate growth in the Nordic region. In the Netherlands, we are currently building an additional “heavy duty” assembly hall to be able to assemble higher quantities of larger and more complex systems.

In addition, we would like to briefly mention the software developments of Valk Welding and our partners. Already since 1995 we are busy with offline programming using DTPS from Panasonic. This year we have realised seamless integration with Oqton, allowing us to send automatically generated programs via DTPS to the calibrated Panasonic welding robots, adjusted or not. Moreover, late last year we launched our partner zone, an online platform that allows us to serve our customers even better.

Our ARC-EYE CSS laser scanner is also constantly being developed in-house. This allows us to automatically process product deviations for both position and orientation and allows real-time adjustment of welding parameters.

For some large customers, we are in the process of developing a completely new solution. The software can decide independently or based on choices made by a welding specialist what the best strategy is for a ‘multi-layer’ weld. This considers all tolerances in both position and shape. We hope to be able to tell you more about this next year.

Finally, with our customers we are increasingly seeing that with the right tools, including software, cameras and welding robots, fewer employees are able to perform work that previously could only be done by specialists. This is important to keep manufacturing work in Europe.

We remain committed to providing our customers with the best service and solutions and look forward to what else the future holds.

**Adriaan Broere (CTO Valk Welding Group)**





# Keltech excels thanks to the support of Valk Welding



For more than a decade, global supply chains have struggled with a shortage of welding capacity. Companies can barely keep up with the demand for welded products. Some companies even speak of a welding crisis. The always proactive Irish supplier Keltech saw an opportunity in this threat to combine advanced robotic welding technology with old-fashioned craftsmanship. In doing so, Keltech has managed to offer its customers a stable supply. “Our company has experienced record growth in the past 12 months. Without the support of Valk Welding, this would not have been possible,” says Seamus Lawlor, Director of Business Development at the company.

Along with Senior Process Engineer Piotr Starosciak, Seamus Lawlor is responsible for the implementation of robotic welding within Keltech. “Our industry has a real welding problem. Lack of skills is the main driver. Welders from central Europe have returned to

continental Europe and the younger generation does not see this trade as a viable option. After COVID-19, we took the step to expand by 50,000 m2, with provision for 30 new welding bays and space for state-of-the-art robotic welding systems completely dedicated to welding.

## Preferred supplier globally for renowned OEM brands

As a preferred supplier to globally known OEM brands, the company specialises in the production of acoustic enclosures, hydraulic/fuel tanks, cabins, and telecom enclosures. “We produce complex metal structures for Caterpillar, Combilift, Moffett, Manitou, Liebherr and Volvo CE, among others. We have the full capacity here to deliver fully finished and coated products from concept to reality,” explains Lawlor.

## High mix, low volume

“The new K3 facility needed to be a mix of manual and robotic welding to grow without relying too much on manual welders. The first challenge was transitioning from manual to robotic welding for hydraulic tanks and forklift parts in a high mix, low volume environment. In the years before, we had made contacts with robotic integrators, before eventually choosing Valk Welding as our supplier,” says Piotr Starosciak. “They had a different concept and a different way of manipulating and could also provide us with the necessary support.”

## Support from Valk Welding

Spread over the year, Valk Welding supplied two identical systems consisting of a Panasonic TM welding robot on a track with a drop centre manipulator on which the workpiece is mounted. “Where other robot integrators only explain how their robot works, Valk Welding taught us how to weld a product on the robot. So, we didn’t just want to buy welding robots, but also the knowledge. To this end, after the installation of the first robot, two specialists from Valk Welding spent two weeks in-house to guide us step by step through offline programming, fixturing, seam searching and correction. After four weeks, we had gained enough knowledge and experience to start working independently, but we are still learning every day,” continued Piotr Starosciak.

## Capacity for one customer almost tripled

“Our biggest challenge was to weld the tanks on the robot without leaks. After several adjustments in the programs, we managed to reduce that to a maximum of only one leak which is a huge difference from before. After the pressure test, we can repair this quickly if necessary. Through fine-tuning we also managed to reduce the welding time by 30 percent, which allowed us to increase capacity from 48 to 120 tanks per week for one particular customer.”

## Flexible production

“When installing the 2nd welding robot, the goal was to be able to robotically weld Over Head Guards for forklifts in addition to tanks. For this, again with the support of Valk Welding, we learned how to program a new product and also how to transfer the welding programs for the tanks from one robot to the other. A stable delivery of high-quality products is what our customers demand. With our recent investments in welding robot technology combined with our skilled workers, we can now meet that,” concludes Seamus Lawlor.

[www.keltech.ie](http://www.keltech.ie)

**600 km of welding in 2022, 7.500 tons of steel per year, 800-1000 tanks per week**



DTPS

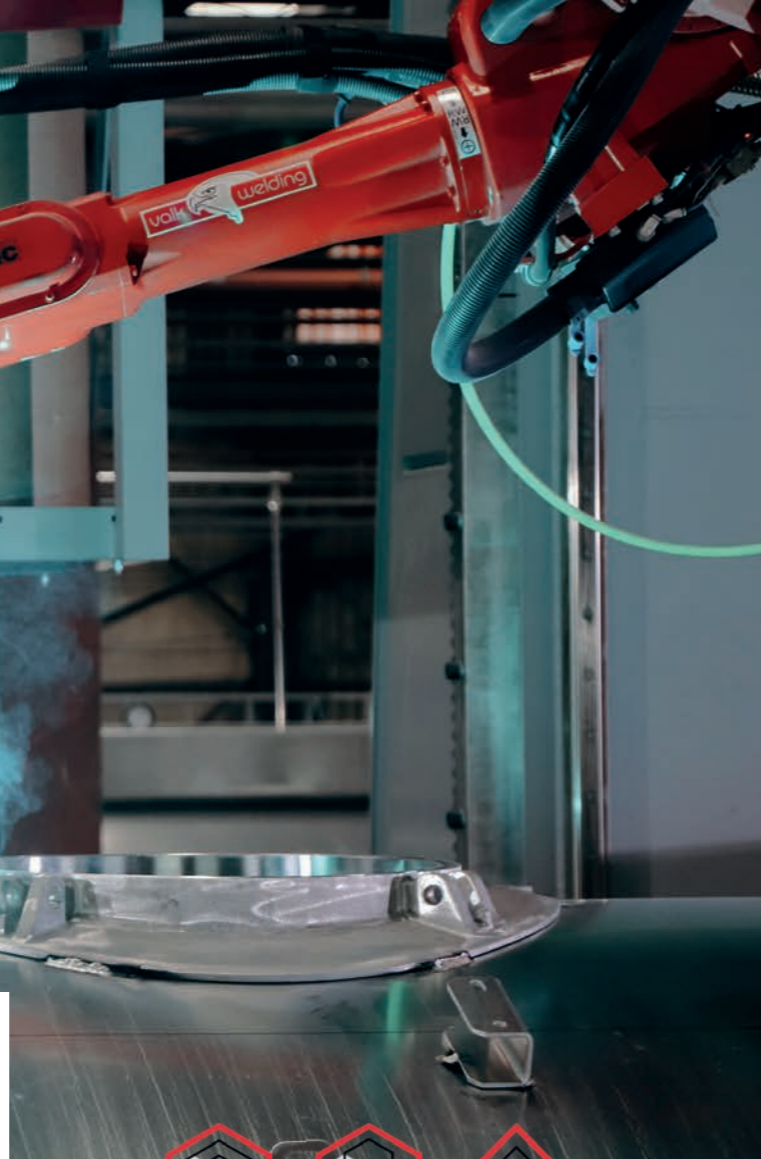


# Halving the production time of LAG Trailers

An optimisation process has greatly reduced the production time at LAG Trailers. The final leap was recently made with the installation of two Valk Welding welding robots. In this way, the largest European builder of aluminium tank trailers wants to continue to grow.

"Someone who worked here ten years ago no longer recognises the factory," says Rob Ramaekers, CEO of LAG Trailers. He is standing at the production line in front of a VALK Welding welding robot that was recently put into operation. Every year some 2,000 tank trailers roll out of the factory in Bree (Belgium) where 420 people are employed. LAG Trailers is the largest producer of aluminium tank trailers in Europe.

Ten years ago, LAG, which is part of the large Chinese transport vehicle manufacturer CIMC, started an impressive optimisation process. The company outsourced the production of hundreds of components to other companies in the region. It also divested a range of ancillary products to focus entirely on the construction of tank cars in which it has specialised since 1947.



DTPS



QPT



ARC-EYE



Watch the video

## Standardisation

During the reorganisation, branched production lines were introduced and the company switched to a modular design of its tank cars. All these modifications greatly increased efficiency and reduced production time. For example, LAG Trailers today makes a tilt-bulk trailer in 250 hours where it used to take 800 hours.

"Standardisation is the basis of success," says Leon Bokken, the company's manufacturing manager. "That also made the arrival of welding robots possible." The first robot was welcomed in 2020 and the second followed in 2022. LAG has five production lines where it builds fuel trailers, tank trailers, bulk trailers, bulk containers, and container chassis. One of the robots is used on the aluminium tanks production line for the bulk trailers, while the other is used in the bulk containers production line.

## Customised welding robot

"Welding aluminium tanks presents several challenges," says Peter Pittomvils, commercial director of Valk Welding, which supplied both welding robots. Valk Welding developed custom welding equipment that was produced in-house. "This also allowed us to make custom welding torches for hard-to-reach places."

The robot is equipped with an ARC-EYE laser camera that copes well with the reflections of aluminium. The camera not only catches position deviations, but, if necessary, can also catch the variation of welding seam geometry, such as

varying gaps, by adjusting the welding parameters in real time (adaptive welding).

## More advantages

With the welding robot, LAG Trailers saves two welders on its two production lines. However, saving on personnel costs was not the main goal of robotisation, Rob Ramaekers emphasises. "Good welders are very hard to find, and if you have them, it is best to use them for work where they are irreplaceable." He also cites consistent weld quality as an important added value of the robots.

Pittomvils often hears the same arguments from customers. With the tightening labour market for technicians, Valk Welding, with nine branches across Europe, is experiencing a huge demand for flexible welding robots. The company is active in numerous sectors and due to its extensive experience in trailer and tank construction, the link with LAG was quickly made. Valk Welding is known within Europe for its very flexible welding robots and meanwhile also has solutions where welding robots are fully automatically programmed.

The welding robots were embraced by the staff within no time. The welding programs are created completely offline thanks to Valk Welding's unique calibration technology. "Programming works just like Lego construction," concludes Ramaekers. "You drag the necessary modules together and the welding program is generated."

[www.lag.eu](http://www.lag.eu)



# Real-time correction of seam shape at irregular pre-openings

As long as parts fit perfectly together, gas cap and wire searching (Quick-Touch) are sufficient to measure deviations in the position of the weld seam so that the robot can automatically adjust it in the welding program. However, with V-, I- and raised welds, irregular pre-openings and deformations due to shrinkage or heat input, it becomes a lot more difficult and sometimes even impossible to weld these welds with the welding robot. Use of the welding robot in such cases is still no match for the speed and flexibility of an experienced manual welder. The ARC-EYE Adaptive plug-in that Valk Welding developed for its ARC-EYE CSS welding seam tracking system now changes this.

ARC-EYE CSS is a laser sensor system, mounted on the robotic welding torch that registers deviations in the position of the weld seam during welding and corrects them in real time. This eliminates the need for manual program corrections and increases process speed. With the ARC-EYE Adaptive plug-in, the ARC-EYE CSS can now also be used to correct welds with larger tolerances in real time. Therefore, workpieces that could previously only be welded manually can now be welded on the robot thanks to this development.

## ARC-EYE Adaptive plug-in recognises the geometry

Due to an irregular pre-opening, a deviant weld seam preparation or distortion caused by the welding process itself, the geometry of the weld seam (seam shape) can deviate. A small geometric deviation can quickly lead to a volume deviation of 40% to 80%. So this means that much more welding material is needed and most likely a different way of welding is needed. With the adaptive plug-in, the ARC-EYE CSS laser sensor also recognises the seam shape and automatically adjusts the welding current, welding voltage, welding speed and weaving movement in the welding program accordingly. Workpieces with larger and

irregular tolerances can thus now be welded robotically. In practice, this means that suppliers and OEMs can guarantee higher consistent “robotic quality” to their customers.

## Real-Time Adaptive Multi-Layer

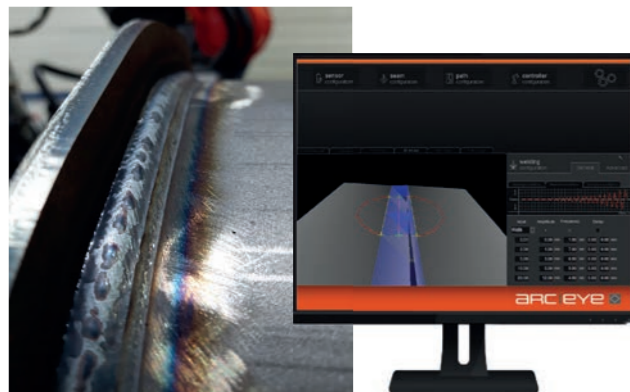
For deviations of a few millimetres, the welding volume can easily double. With such differences in geometry, Real-Time Adaptive Multi-Layer can automatically accommodate this volume difference.

## Real-Time Adaptive Seam Mapping.

When during multi-layer welding the volume differs per layer, it is necessary to distribute the welds differently per layer. Therefore, it may be necessary to use a different welding strategy per layer. For this scenario, engineers at Valk Welding are now working on Adaptive Seam Mapping in which each weld, layer by layer, is automatically calculated and generated. During or after the root seam, the ARC-EYE scans the seam shape and uses this data to calculate the best-fitting weld distribution. This calculation then considers the varying weld volume and minimum/maximum allowable heat input per weld.

## ARC-EYE CSS:

- Delivers a correctly positioned weld seam
- Also on reflective materials such as stainless steel and aluminium
- No manual program corrections
- No complex welding jigs
- Increases process speed
- Increases process accuracy
- Prevents unnecessary rejects
- Greatly enlarges the area of application of welding robots
- Increases OEE (overall equipment efficiency)



## Practical example of welding crane booms

At the German company KSK Vlassenroot, which manufactures, among other things, the crane booms for Liebherr cranes, very strict requirements are placed on the welding due to the high forces on the crane booms. Because the assemblies are made of cast and rolled steel the gaps never close 100%, until recently they were exclusively welded by hand. When KSK Vlassenroot could weld the crane booms robotically, the supplier could guarantee a higher and constant welding quality. Thanks to the deployment of ARC-EYE CSS and the Adaptive plug-in, these crane booms are now successfully welded on Valk Welding welding robots. Meanwhile, more customers require that other parts are also welded in this way.



## One robot does what 6 manual welders can do

In close cooperation with Valk Welding, Danish supplier NG Metal A/S has succeeded, for critical crane arm parts, in making the transition from manual welding to robotic welding. “Where we used to need 6 manual welders to weld a complete part, the robot now does that work in one shift. With the high weld quality delivered by the robot, we can now meet both the high-quality requirements and we can produce such critical parts competitively in-house.”

To this end, NG Metal has invested in two Valk Welding welding robot systems last year, a TRACK-Y and a FRAME-H concept. In addition to the Danish factory, the supplier also has a production plant in Ukraine, close to the Polish border. There, with 220 employees, in addition to products for store fittings, among others, it also manufactures boom parts for small mobile cranes. “Particularly on the extendable inner and outer boom parts, our customer has very high-quality requirements for the welding, because these cranes are used to lift one person with small vans used for example for maintenance of street lighting or window cleaning.”

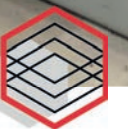
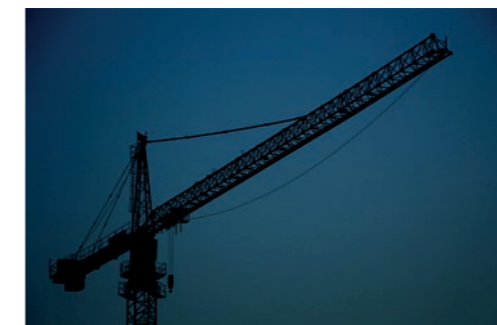
### Most technological knowledge in Ukrainian facility

Regner Ditlev Dahl, group sales director: “In our production plant in Ukraine, we have been working with about four Valk Welding

welding robot systems since 2015. That is also where all the knowledge and experience in programming is located. If we also want to be able to work competitively in Denmark, it was not only necessary to invest in welding robots but it was also necessary to bring that knowledge to Denmark. Of course, this does not happen overnight, which is why we hired external specialists and programmers from Valk Welding in the start-up period.”

### Deployment of Super Active Wire Process

In addition to the right welding system, offline programming system and welding seam search system, Valk Welding also had an important role to play in determining the most suitable welding process. The starting point was the welding of thin 1.5 mm thick high strength steel to 8 mm flange material. Allan Nielsen of Valk Welding DK: “The challenge was to achieve sufficient penetration into the 8 mm material without burning away the 1.5 mm material. To achieve that, we used Panasonic’s Super Active Wire Process (SAWP) with the Servo Pull III torch to obtain very precise parameters. Since the SAWP welding process for this application demands a very precise position of the welding wire, and the product itself is well outside the tolerance range, the deployment of our quick search system was necessary. SAWP also reduces spatter by 99%.”



DTPS

### High consistent weld quality

On the Servo Pull III welding system, the wire feed motor is mounted close to the torch, providing a constant wire feed and an accurate aiming point for the wire tip. This allows us to set the parameters very precisely and achieve a very stable result.” In order to ensure high consistent weld quality for the customer, NG Metal had to set up completely new welding processes WPS/WPQR when transitioning from manual to fully automated welding. “Our customer, a large OEM, is now very satisfied. We are the first in Europe to weld these parts on the robot.”

### Short payback period

“The time studies in the programming phase indicated a payback period of 1.5 years. That is extremely short! With this project NG Metal and Valk Welding have proven the feasibility, and thanks to automation the capacity can be increased, less finishing is required, quality can be increased and cost savings can be realized “concludes Regner Ditlev Dahl.

[www.ng-dk.com](http://www.ng-dk.com)



# Kemeling plastics pioneer with robotic welding

Larger quantities and larger dimensions thanks to deployment of robots

Kemeling Kunststoffen in Naaldwijk develops and produces high-quality industrial plastic containers, tanks, wells, boxes and cabinets with the help of a robot. The company pioneered this already 6 years ago and now has 3 welding robot installations with which round and rectangular plastic products are made in larger numbers. “The robots support the employees, taking over the work where it becomes monotonous. With the use of the robots, we can now serve new markets with larger quantities and larger dimensions, which we were not previously equipped for, says owner Robert Kemeling.

Kemeling Kunststoffen makes plastic products for horticulture, yacht building, water treatment and the firefighting sector, among others. Mostly for storage of solid and liquid substances. The company builds those products largely from flat PE, PE and PP plastic sheets ranging from 6 to 30 mm thick. Those sheets are cut to size and milled into contours, after which the individual components are assembled into an end product using thermal welding.

## Self-experimented

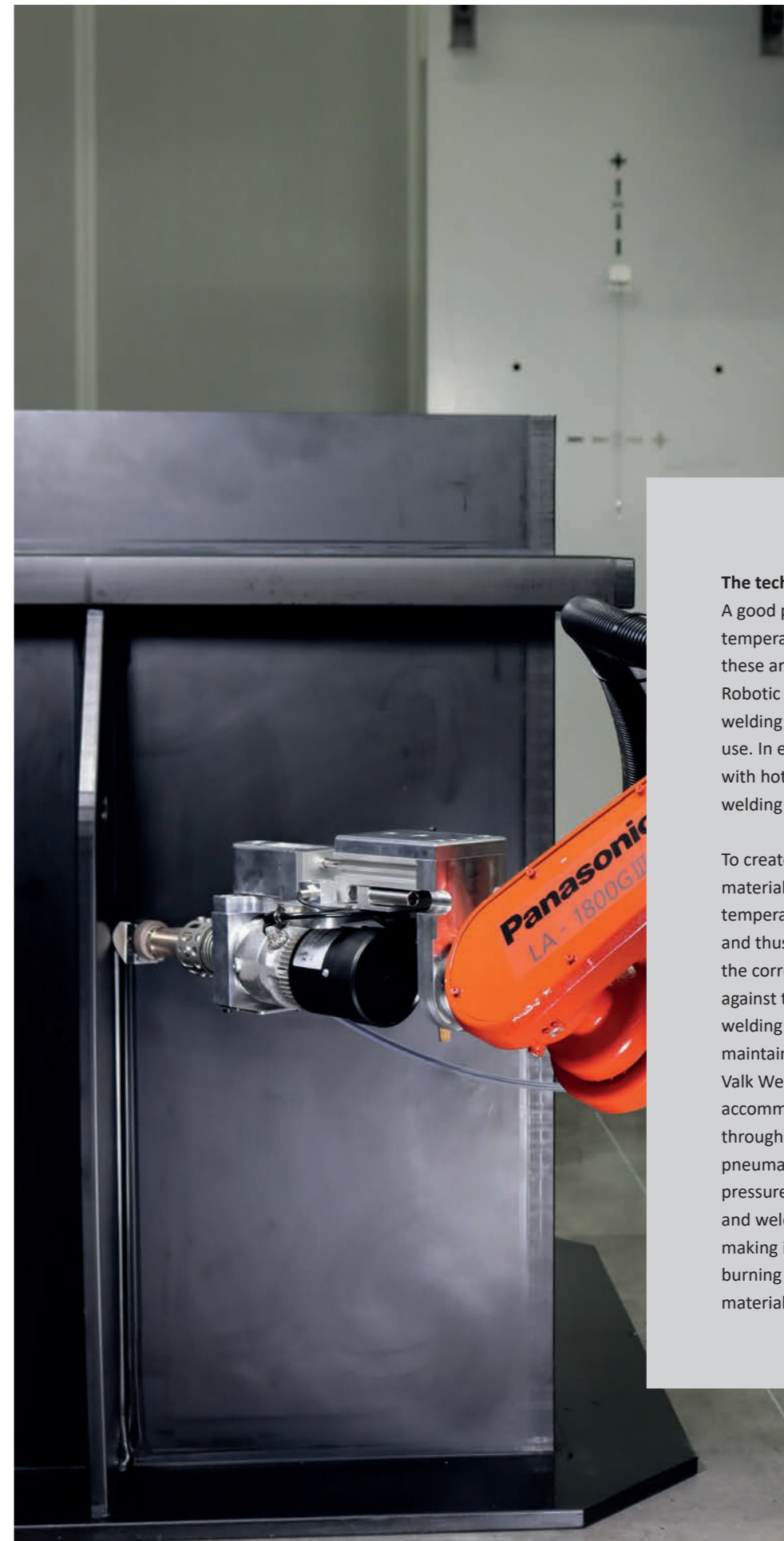
Robert Kemeling: “Joining the plate parts in a high quality requires a certified welder. But handling the welding extruder is also



ergonomically demanding, especially with larger quantities and dimensions. Our idea was therefore to implement a robot with a welding extruder to initially automate monotonous welding. After experimenting with a used robot, we submitted our concept to robot integrator Valk Welding. They developed it into a working robot cell with which we could weld round tanks up to 3 m Ø both internally and externally with the robot on a base plate. The table rotates at a speed that the extruder can keep up with”.

## New possibilities

“With the robot, we achieved significant savings in labour costs and were able to increase quality. Production capacity went up because 1 employee could now work on 2 trays simultaneously. In addition, the robot works in a constant uninterrupted movement, resulting in consistently high quality. For our employees, this meant less strain. It soon became clear to us that the use of the robot offered new opportunities to meet demands that we had previously left unfulfilled. For example, we made 200 tanks for an algae farm and over 200 scooters with plastic containers for PostNL.”



## The technology

A good plastic weld depends on three variables: temperature, speed and welding pressure. Combined, these are the key factors for good plastic welding. Robotic plastic welding uses a brushless extrusion welding machine specifically designed for robotic use. In extrusion welding, the material is preheated with hot air and joined by adding the ground plastic welding wire.

To create a good strong weld, both the base material and the filler material must be at the right temperature. The speed at which the weld is applied and thus the robot arm moves is important. As is the correct pressure with which the weld is pressed against the base material. Especially with a changing welding direction, this used to be a challenge to maintain a correct welding pressure. With the Valk Welding tool holder, the welding robot can accommodate distance changes in two directions through a linear carriage and a pivot. These are both pneumatically controlled so that a constant welding pressure is realized. The hot air, amount of material and welding speed are independently adjustable, making it possible to weld corners without the risk of burning the base material or melting down too much material.

continued on page 14 →



### Professionalizing

Shortly thereafter, the company moved to a larger location, with room for a second larger similar robotic cell. Kemeling also digitized production, raised the organisation to a higher level and expanded the milling department. “Those investments have led to a professionalization drive that has enabled us to achieve a healthy 55% growth in sales over the past six years.

### 3rd robotic cell for rectangular products

For the past two years, Kemeling has been working on preparing a robotic cell to also be able to thermally weld rectangular products. “Think tanks for water treatment and sprinkler tanks”. Meanwhile, a large installation, also from Valk Welding, is now in place for this purpose, where the robot hangs from a gallows which moves along a track. This allows the robot to reach all positions within the product with the welding extruder. We could not have made such large products without the robots”.

### With only a robot you are not there

“Most of the knowledge and experience is in how to compensate for the size loss that occurs due to melting. We have recorded that knowledge in the offline programming and simulation software of Valk Welding. This also offers the possibility of parametric programming. With this, we make custom work based on standardization. It is sufficient to adjust only the dimensions. Therefore, you do not have to completely reprogram every new product. So, the software is an important part of the process. A robot alone is not enough,” emphasizes Robert Kemeling.

### Man continues to lead

The robots have taken over much monotonous work from the certified welders. “But humans still remain the leading factor in production. We see the use of the robots as supportive, with a focus on cooperation. While the robots weld, our employees do the preparatory tasks and the more specialized operations. The upside is in the savings in labour costs, higher consistent quality, larger quantities and the relief of our employees. With the 3 robot installations, we are open to new markets and products,” concludes Robert Kemeling.

[www.kemeling.nl](http://www.kemeling.nl)



Watch the video



DTPS



# A ferris wheel concept for agricultural machinery

Metallbau Diekmann GmbH is a medium-sized company active in sheet metal processing. Their customers come mainly from the fields of: Agricultural technology, vehicle construction, solar industry, as well as ventilation and heating construction. But also special machine construction areas such as transformer construction, including: welding, profile lasering, drilling, sawing, edging, bending or also straightening rolls for steel, stainless steel, galvanized material and aluminium.

In the key area of robotized welding, the capacity was expanded further with another Valk Welding robot installation. This robotic installation constructed in a Ferris wheel concept was purchased for both single piece production and series production. Ralf Diekmann says, "We decided on this design because the space required at the installation site was important. Also, due to the flexible adjustment of the table width, we were able to



adopt our existing template construction. With Valk Welding's off-line programming, we can create new products while the robot is welding. And we weld large products on the large Valk Welding installation anyway. With approximately 15 manual welders and 3 welding robots, the welding assemblies are manufactured in a 2-shift operation.

We have again decided in favour of Valk Welding for this robotic installation, because the service and the technical competence was convincing, says Andreas Uhlhorn, metal construction foreman at Diekmann. For us, but also for Valk, it's the people and the cooperation that counts. This is still a decisive point next to all the fabulous technology.

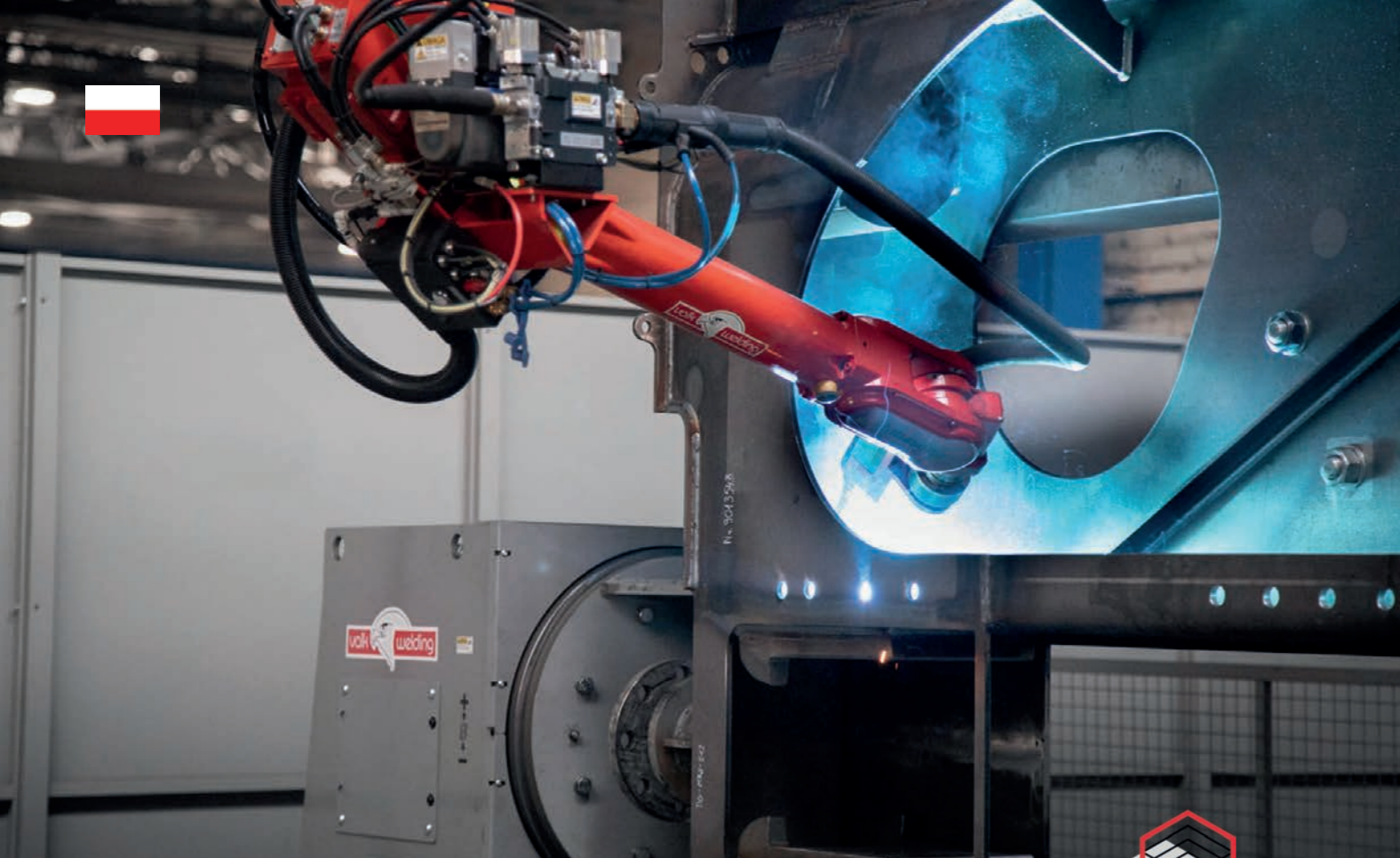
The company was founded in 1946 by Josef Diekmann. What was then a small forge has grown into a well-established company that currently employs around 100 people. On an area of more than 27,000 square meters, of which 9,700 square meters are covered production areas with extensive storage capacities, Diekmann manufactures complete assemblies, series or single piece production according to

customer specifications. Deliveries to customers from all over Germany are made using the company's own fleet of vehicles.

[www.metallbau-diekmann.de](http://www.metallbau-diekmann.de)



Managing Director: Ralf Diekmann in front of another robot system, where larger assemblies are manufactured.



DTPS

# Increasing production efficiency at Chemet S.A.

The CHEMET Group, which includes CHEMET S.A. in Poland and CHEMET GLI SAS in France, is Europe's largest supplier of a full range of products and services for the LPG and other liquid gas markets. Today, the company is the largest European manufacturer of LPG storage and transport solutions, covering almost the entire LPG distribution chain: from stationary domestic tanks to cylinders, large storage tanks, LPG station modules, tankers and rail tank cars. The CHEMET Group has nearly 80 years of experience in designing, developing and manufacturing pressure vessels for various hazardous media (LPG, LNG, ammonia, chlorine, hydrogen). CHEMET provides its services both to multinational and individual customers.

## In the beginning, there were concerns

The introduction of the new robotic welding technology initially raised many concerns. Welding parts for rail cars requires extremely strict standards and the maintenance of tight tolerances. The bar is also raised by the all-important fact that these are tank cars used to transport hazardous materials. "After an initial analysis of the parts, subassemblies and assemblies that we felt had the greatest chance of success, we

began discussions with Valk Welding to identify all of our requirements, as well as the potential risks that could arise during the project. The implementation of robotic stations for welding assemblies and subassemblies of tank supports and car frames was an extraordinary challenge," said Artur Lepszy, welding technologist at CHEMET S.A.

## Implementation of a robotic workstation in manufacturing

"To increase confidence in the success of implementing a new robotic welding technology, it makes sense to draw on the experience and expertise of professionals. Our choice was obvious. The equipment was purchased as a complete station including implementation in production. To see if the supplier met our requirements, we performed welding tests on our workpieces at Valk Welding. The tests carried out enabled us to fine-tune the specification parameters of the individual workstations to fully meet the requirements and objectives of robotizing the entire process." - Says Michal Majzner, senior design engineer responsible for the welding robot implementation process at CHEMET S.A.

CHEMET adapted robotic welding under an already existing production process. Welding jigs were also designed to clamp the welded parts in the form of frames, making the entire process as repeatable as possible. Valk Welding programmed the complete welding process for the parts selected at CHEMET for the robotic station. This allowed production to start almost immediately. Virtual offline robot programming is an extremely useful feature for such large and complex programs. As a result, changing or improving a working program takes only minutes instead of hours.

## Tasks for welding robots at CHEMET

Robots make it possible to significantly speed up the production process, eliminate repetitive and lengthy human tasks and, most importantly, ensure high and reproducible quality of welded joints. Currently, robots weld bushings and support pins for LPG tanks, elements of wagon frames as subassemblies and large elements of wagon frames (so-called tracks) on which pressure vessels are mounted.

## Large dimensional deviations - can the robot handle that?

"Designing new tooling has helped to reduce deviations, but we cannot reduce them to zero. Therefore, the robot must be equipped with a full suite of sensors so that it can self-monitor the position of the workpiece and automatically correct the motion trajectory. This includes the use of touch sensing technology for the welding wire. The uniqueness of the touch sensing of the Valk Welding welding robot lies in the increased detection voltage, which significantly increases the accuracy and repeatability of detection, even on highly contaminated workpieces," said Paweł Kałuża, chief welder at CHEMET S.A.

## Changes brought about by robots

The company's target criterion before the introduction of the robotic workstation was to increase production capacity by at least 50%. But above all, quality was also significantly increased thanks to the total repeatability of the entire process. "The process of robotization is a continuous process where technology is constantly being developed and problems are being solved that were previously not considered relevant or even noticed. Nevertheless, so far we are very satisfied with the robotization of selected workstations, as it not only makes production more flexible and faster, but also increases the quality of

products manufactured by CHEMET," said Katarzyna Głowik - Technical Director of CHEMET S.A.

## Why Valk Welding?

Cooperation with the robot installation supplier does not end with the purchase of the robot, but is planned as a continuous process. It starts with the joint development of the concept of the most optimal booth, followed by the selection of suitable tools, then the comprehensive and efficient implementation of the project in reality and ends with the training of the employees who operate the robotized plant. The technical implementation of the programs at the start-up of the station is one thing, another - equally important - is the supplier's approach to post-sales support. The team at Valk Welding provides support in creating new programs and taking over the robot to work on realizations for new product groups. "What was decisive for our decision was Valk Welding's experience in welding huge structures, their programming knowledge and access to DTPS software for virtual offline robot programming in 3D." - said Artur Lepszy CHEMET S.A.

## Future plans

"Based on the acquired knowledge and skills, we are constantly thinking about expanding the number of robot installations in our organization. We already know that there is a very high probability that in the near future we will be able to write again about a successful implementation of more robots on our production line." - said Michal Majzner CHEMET S.A.

[www.chemet.eu](http://www.chemet.eu)





# Robotic welding becomes a must at Burel Group

The shortage of welders, the economy, flexibility, agility and quality of work of a Valk Welding robotic welding cell prompted agricultural machinery manufacturer Burel Group to expand its cooperation with the Dutch supplier.

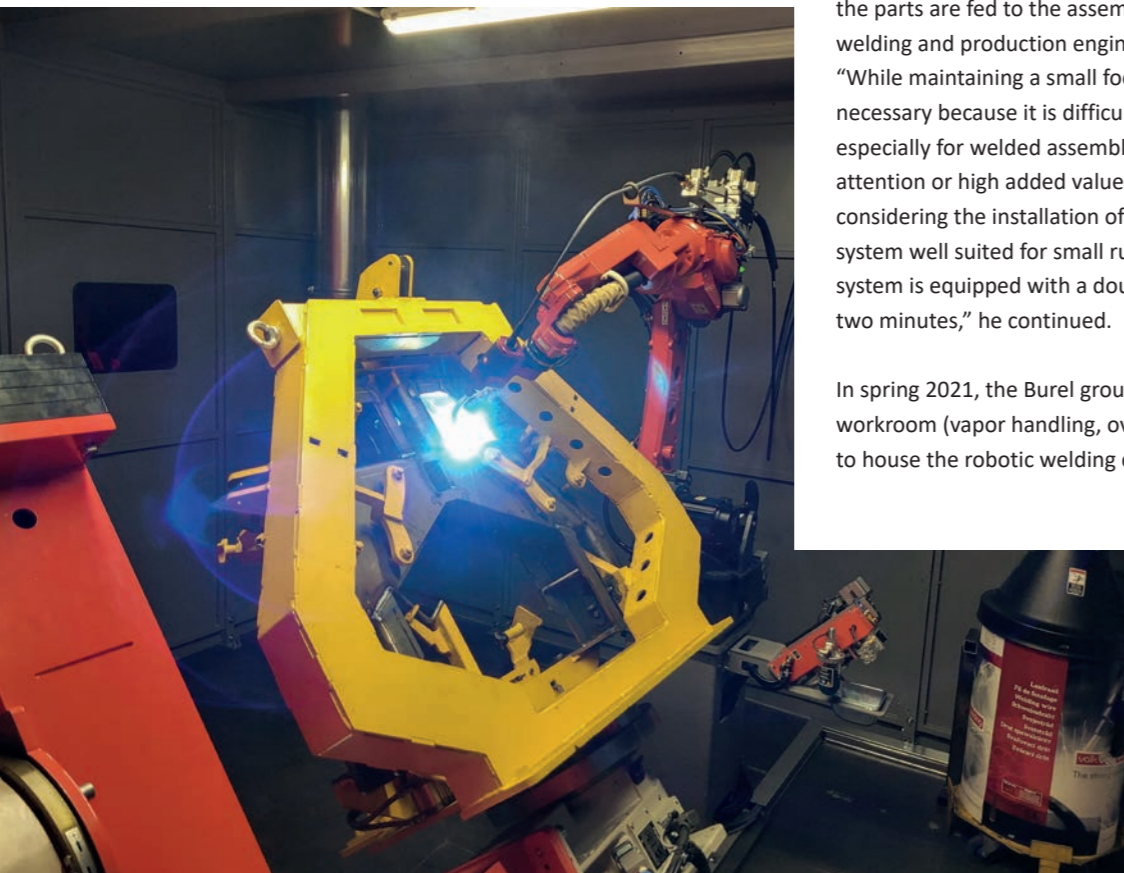
In the agricultural sector, Burel Group, with 300 employees and total sales of over 65 million euros, was founded in 1936. With three sites in France and one in Italy, this family-owned company specialises in the design, manufacture and sale of tractor-mounted machinery for tillage, seeding and fertilising. The workshops supply 4,000 speeders, fertiliser spreaders, harrows,

discs and tines to the whole world every year, as over 60% of the machines are exported.

In Chateaubourg (35), the Burel Group has a 20,000 m<sup>2</sup> factory inaugurated in 2011 for the production of its machines. The plant operates in 2x8 hour shifts with the possibility of working in 3x8 hour shifts for assembly, on certain presses and welding robots.

“At the Châteaubourg plant, several activities are performed: forming with bending, punching and preparing the elements for welding. After welding, the assemblies are sent to the painting department with blasting and surface treatment. Once finished, the parts are fed to the assembly lines,” explains Eric Massard, welding and production engineer. “While maintaining a small footprint, robotic welding is necessary because it is difficult to find qualified operators, especially for welded assemblies that require special visual attention or high added value. More recently, we have been considering the installation of a flexible and manoeuvrable system well suited for small runs with quick tool changes. The system is equipped with a double reel to change wire in less than two minutes,” he continued.

In spring 2021, the Burel group invested in a fully equipped workroom (vapor handling, overhead crane coverage, digitizing) to house the robotic welding cell designed by Valk Welding.



**BUREL**  
PRODUCTION



DTPS

The unit includes an L-type rotary positioner with two stations for loading/unloading parts into the cell while the robot welds. “The six-axis robot welds on one side while the operator cleans and removes the completed assembly on the other side. After that, the operator loads the next part onto a jig and fixes it, before switching the two stations.”

The system, combined with the positioner, which has two rotary axes, one vertical and one horizontal, contains a total of eight axes. The cell is equipped with rapid mould changeover using three zero-point centring units. These options reduce non-productive times to less than ten minutes during changeovers. The cell is completely enclosed so that the heated workshop air is not extracted. A supply of outside air allows the treatment of vapours and saves energy associated with heating the building.

The economical, robust and reliable Valk welding cell currently processes 15 different parts with cycle times ranging from 1.5 minutes to 55 minutes. Among other things, the cell produces a complex welded assembly, a weighing hook. This part, which is used intensively, must always be dimensionally stable and regular, as it provides the instant weighing function on the range’s manure dividers.

“We design our implements in-house. After the offline programming phase (DTPS), the tools are validated and then integrated into production,” explains Marvin Hillion, production welding methods technician at UAP. “The welds must be absolutely controlled with no porosity. Indeed, we noticed that some rust was coming out of the welds. So, we remain vigilant on their quality by avoiding sharp edges and by removing the smallest hole where cataphoresis cannot enter at the risk of starting a corrosion point,” he continued.

Indeed, since 2019, the Burel Group has offered its customers a seven-year warranty against corrosion. And as with welding, the preparation of parts before painting is very meticulous for a result that must meet this requirement.

What we appreciate about Valk Welding is their great mastery of the trade and their genuine support, as they are welding specialists rather than roboticists. Thanks to this cooperation, we can machine sheet metal from 1 mm thick to sheet metal up to 35 mm thick for chassis and structures,” Eric Massard concludes.

[www.sulky-burel.com](http://www.sulky-burel.com)



# Robot prepares components for soldering

**Flexible metal hoses and flexible elements are key components for many industries, including automotive, chemical, petrochemical and energy. Founded in 1854 and based in Pforzheim, Germany, Witzmann specialises in the manufacturing of these components and is one of the world's leading manufacturers.**

The company offers a wide range of products, including metal hoses, expansion joints, flexible metal couplings and other flexible components. These products are used in various applications such as water and gas transmission, ventilation and air conditioning, as well as in the distribution of these media in the automotive industry.

In 1993, Witzmann Opava was founded, which over time has become a full-fledged member of the Witzmann Group, comprising of 22 plants in 17 countries.

Between 2008 and 2018, the Witzmann Opava plant saw a significant increase in deliveries specifically to the automotive industry, at a time when unemployment levels were hitting record lows and finding any two hands to work was practically a superhuman task.

It was in 2018 that the Witzmann plant in Opava decided that it was necessary to automate/robotise at least some of the tasks required for the production of components used in the automotive industry. These components form an important part of the portfolio of this branch.

Relatively small and seemingly simple components that need to be firmly joined before processing in the soldering furnaces became a challenge for the welding robot, which was selected as the ideal tool for streamlining production.

Richard Mareš, responsible for the project at Valk Welding, says: "These are assemblies where components of different thicknesses are joined together and components where it is difficult to guarantee ideal tolerances (especially the throat for the counter-beam assembly), which are necessary for reliably repeatable robotic TIG welding. It was therefore necessary to find procedures to eliminate these problematic points."

"During extensive testing at Valk Welding's technical centre, this was achieved and all tolerance imperfections in the production preparation were compensated for using appropriate programming techniques and excellent knowledge of the welding process," adds Richard Mareš.

At the beginning of summer 2019, the first Frame-E robotic system could be installed, equipped with a Panasonic TM-1600G3 industrial robot and complete equipment for TIG welding (Panasonic YC-300BZ3 welding power supply with accessories), including a VWPR-TIG torch developed by Valk Welding. This robotic system is equipped with two workstations, access to which is limited by a quick-release door. This solution appears to be ideal for welding with relatively short cycle times and significantly eliminates non-productive times, thus allowing operators to operate both stations with minimal effort.

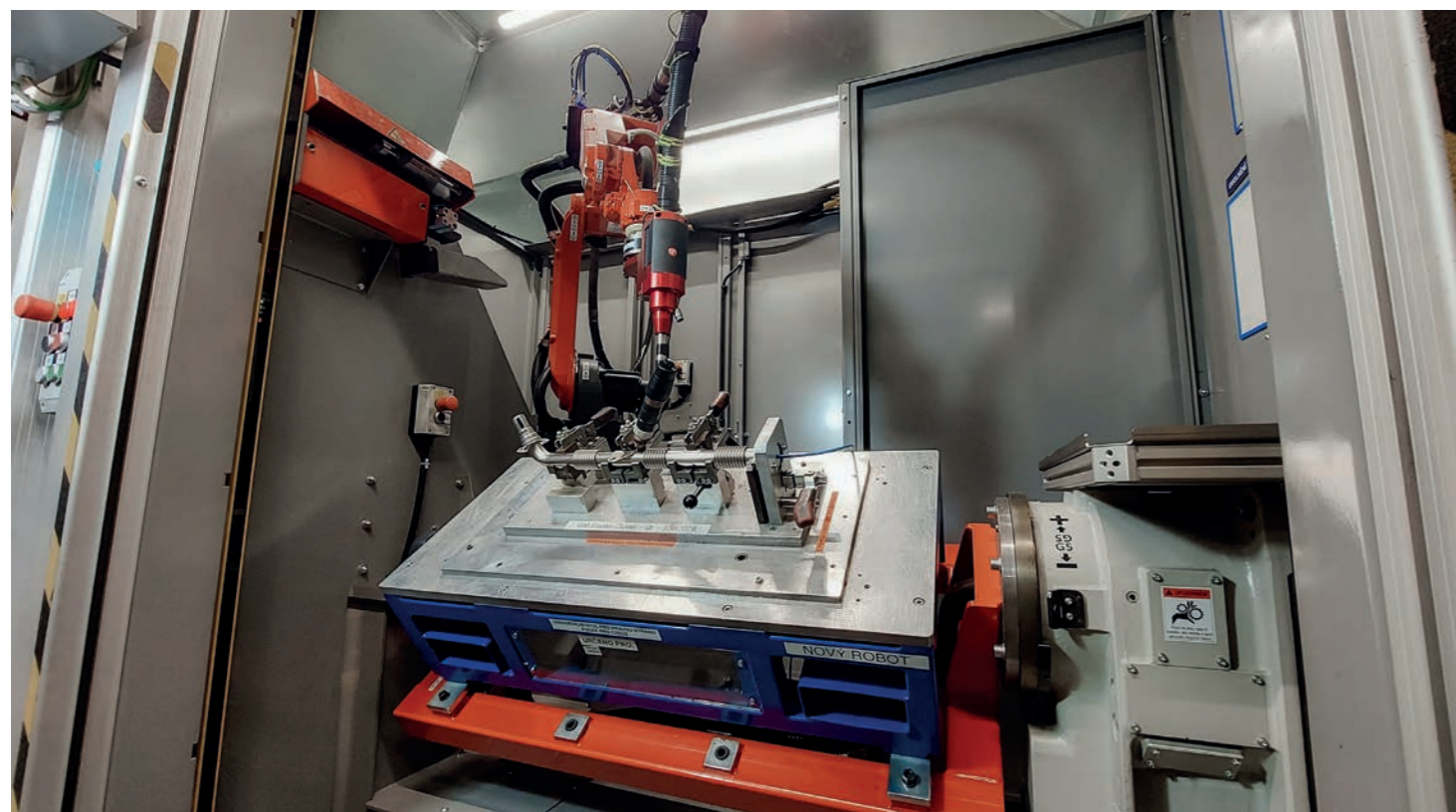
Quite quickly after the installation of its first robotic system, for welding, Witzmann evaluated its benefits as very positive and decided to create a new position of Robotics/Automation Process Specialist/Manager, who is Mr. Martin Špiláček. Under his supervision, a total of three more robotic workstations for TIG welding of a similar concept were installed within both Witzmann Opava and Witzmann Slovakia.

Since appetite grows with food, there are still not enough hard-working hands, and positive examples in particular pull, Mr. Špiláček and his colleague Mr. Alexander Benda managed to implement 2 Techman cobots supplied by Valk Welding as flexible operators of CNC machine tools and bending machines during 2022. Thanks to the mobility of these cobots, it is possible to use them at the machines where it is needed.

Mr. Martin Špiláček summarizes, "In Valk Welding we have found a true partner for robotics. They guided us through all

the initial pitfalls and enabled us to deploy our first robotic application in a relatively short time, which has significantly streamlined our production. Over the last 4 years, together with our partners from Valk Welding (thanks especially to the trio Richard Mareš, Jakub Kovář and Jan Šindel), we have successfully implemented several robotic and cobotic applications."

[www.witzenmann.cz](http://www.witzenmann.cz)



*With the Partner Zone, Valk  
Welding continues to build a strong  
connection through an all-in-one  
software platform.*

# Valk Welding Partner Zone



In order to serve current customers with software from Valk Welding better and faster now and in the future, Valk Welding presents the Partner Zone. This online communication platform provides access to all information about our software solutions, including DTPS offline programming, QPT Quick Programming Tools, ARC-EYE laser tracking camera with Adaptive Welding, MIS (Management Information System) and SFC (Shop Floor Control).

## Updates and libraries

The Partner Zone was created to provide customers with even better service. Targeted access allows each customer to quickly access the right information. For example, MIS users will find the latest widgets, DTPS'ers with a support contract will download tools that allow them to program more efficiently, and customers with a laser vision system will find the latest information on the ARC-EYE. The Partner zone provides one place where customers can find all the important software and documentation.

## Platform for the future

With the Partner Zone, Valk Welding focuses on the future, Valk Welding wants to provide an all-in-one platform where information can be obtained as well as shared. Options such as a forum, DTPS VR zone and storing the latest DTPS programs are among the possibilities we are currently investigating and/or testing.

Do you have a DTPS support contract, an ARC-EYE, MIS or SFC, but are not yet working with the Valk Welding Partner Zone and are interested in doing so? Then please contact us via [DTPS@valkwelding.com](mailto:DTPS@valkwelding.com), our colleagues will be happy to assist you.

DTPS stands for Desktop Programming and Simulation Software and is the software for offline programming of Panasonic welding robots.



DTPS



QPT



ARC-EYE



SFC



MIS 2.0

## Tradeshows 2023

Mix Noordooost  
10.05 - 11.05 (NL)

Schweissen & Schneiden  
11.09 - 15.09 (DE)

Hi Tech & Industry  
Scandinavia  
03.10 - 05.10 (DK)

Sepem Industries  
10.10 - 12.10 (FR)

Metavak  
10.10 - 12.10 (NL)

MSV Brno  
10.10 - 13.10 (CZ)

Welding Week  
21.11 - 22.11 (BE)

[www.valkwelding.com](http://www.valkwelding.com)