VALK MAILING
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25th year - 2025-1

Tenth welding robot at Belgian tube specialist

Fomeco

Content

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The Valk Mailing has been put together with care by Valk Welding. From concept to creation, our team has worked hard to realise this magazine and provide you with relevant information, inspiration and insights into the world of welding technology and automation. For any questions, comments or suggestions, please feel free to contact us at info@valkwelding.com. Thanks to all employees and partners who contributed to the success of this magazine.

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Dear reader,

It is with great pleasure that I welcome you to this new edition of our biannual magazine, the Valk Mailing. We are proud to once again present you with a range of inspiring customer cases and innovations that demonstrate how we at Valk Welding continuously strive for progress and perfection in welding technology.

One of the highlights of this edition is undoubtedly the case study at Tilbox. Here, we have successfully delivered a fully automated programmed welding robot for the manufacturing of toolboxes. This innovation was made possible by the configurator on the Tilbox web shop, which serves as input for our in-house developed QPC (Quick Program Configurator). This QPC is a plugin on DTPS and forms an integral part of our ARP (Automated Robot Programming) solutions. This project is a clear example of how we provide custom solutions that optimise our customers' production processes.

Additionally, I would like to draw your attention to an impressive case from the Czech Republic, where Tawesco put their fourth and fifth robots into operation last year. With this expansion, they now work with an average of one robot per year, underscoring their commitment to automation and efficiency. This collaboration highlights the sustainable relationships we build with our customers and our commitment to delivering top-quality robot solutions.

I hope you find these stories as inspiring as we do. I wish you much reading pleasure and inspiration in discovering the possibilities that our innovative solutions have to offer.

Adriaan Broere (CTO Valk Welding Group)

Tenth welding robot at Belgian tube specialist

Belgium

Increased complexity and stricter quality requirements are the basis for the robotisation of welding at Fomeco. The Belgian metal company focuses on the production of tube products for trucks, buses, and machine builders. At the end of last year, the tenth Valk Welding robot was put into operation. The latest is equipped with SAWP technology and has significantly reduced the failure rate of aluminium work.

In an impressive welding line, ten welding robots are lined up. The employee clamps the pieces in the jigs, and after welding, removes the welded pieces from the robot to then connect them to a pressure system and submerges them in water. If no bubbles rise, the piece is leak-proof and can proceed further in the production process.

We are in the workshop of Fomeco in Zwevegem, West Flanders, a global player in the production of exhaust pipes, cooling tubes, and various chassis tubes for trucks, buses, and the off-road industry.

In addition to these original markets, the company, which has 220 employees, including a branch in Brazil, increasingly supplies other markets such as the compressor and electric truck industry.

Super Active Wire

The penultimate robot in the welding line was put into operation at the end of last year and, like the other robots, comes from Valk Welding. Externally, the newcomer differs little from the others, but due to its Super Active Wire Process (SAWP) technology, it is unique. SAWP provides dynamic, servo-controlled wire feeding, combined with special software in the welding machine.

“This technology makes it possible to weld more stably at a lower amperage. This is particularly interesting for thin-walled materials with high thermal conductivity, such as aluminium, where the risk of burn-through is greater,” says Michel Devos from Valk Welding, who witnessed the implementation of most robots at Fomeco.

Although he has been with Valk Welding for 28 years, he did not witness the delivery of the first robot. “That was in 1991, when my parents bought it,” says Vincent Bayart, second generation at the metal company. After joining the company in 1998, he has remained loyal to Valk Welding.

More complex welding

Besides the tight labour market and higher productivity, the increased importance of robots is also driven by the complexity of tube welding. “With sheet metal, you can weld one piece in one motion, whereas with tubes, you must perform multiple start-stops. Each start-stop carries the risk of a leak. Robots can make movements that humans cannot and often require only one start-stop,” explains Michel Devos.

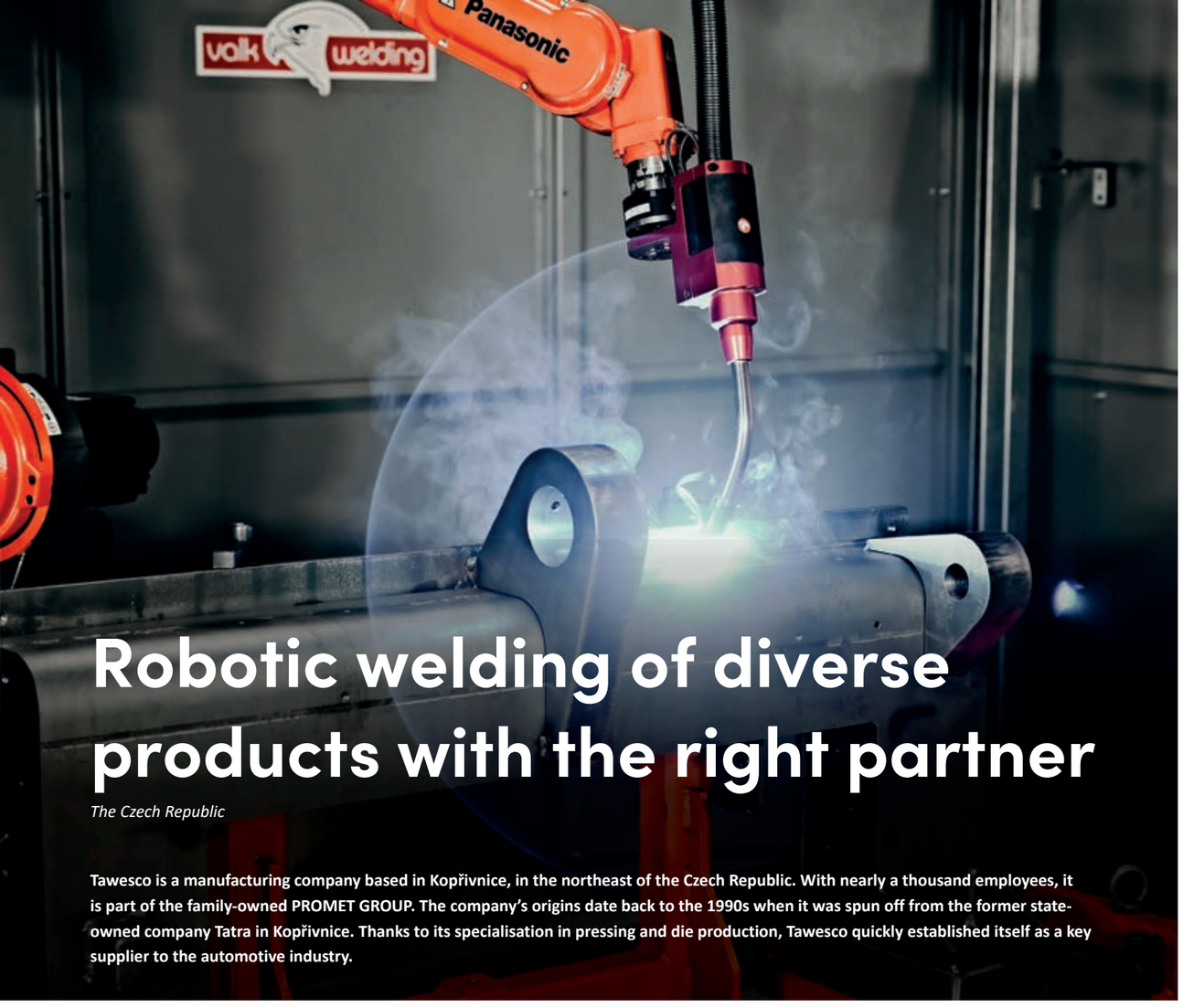
Since the arrival of the first robot, the complexity of welding and quality requirements have increased significantly. This has everything to do with stricter emission standards. “The exhaust of a Euro 1 engine is not comparable to that of a Euro 6 engine. Nowadays, there are sensors, insulation shells, and complex bends to better retain heat towards the catalyst. When the exhaust gas leaves the catalyst, it must cool down quickly,” says Bayart.

Increasing quality requirements

Where quality welding and the absence of leaks are crucial in the automotive industry, this is possibly even more important for other applications of Fomeco’s tube parts. “For example, we supply systems for cooling data centres. You cannot afford a data centre to fail due to a leak in the cooling system,” explains Bayart. “And the tubes we supply to the compressor manufacturer are under very high pressure, making stable, good welding quality essential.”

With the commissioning of the welding robot with SAWP technology, Fomeco has boosted the quality of aluminium welding. “Due to the SAWP technology, there is significantly less failure of parts,” says the Fomeco director, who praises the collaboration with Valk Welding. “Together we strengthen each other. Valk Welding knows everything about robots, and we know everything about our tube work,” he concludes.

www.fomeco.be



Robotic welding of diverse products with the right partner

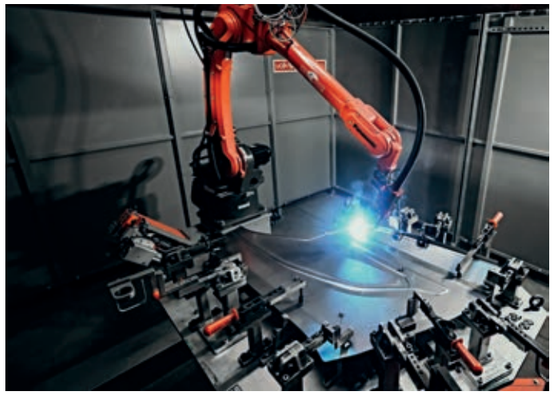
The Czech Republic

Tawesco is a manufacturing company based in Kopřivnice, in the northeast of the Czech Republic. With nearly a thousand employees, it is part of the family-owned PROMET GROUP. The company's origins date back to the 1990s when it was spun off from the former state-owned company Tatra in Kopřivnice. Thanks to its specialisation in pressing and die production, Tawesco quickly established itself as a key supplier to the automotive industry.

First projects for segments other than the automotive industry
Over the years, it became clear that product variation was necessary for the company's further development. The first projects in agricultural technology were realised in 2008, which were then welded entirely by hand. In 2017, a project followed that required the use of robotic welding. This project came about due to John Deere's decision, a major supplier in agricultural and forestry technology, to outsource additional work. However, it turned out that even a "simple transfer" of existing technologies can be quite a challenge without the right partner.

Important project for forklift manufacturer
In 2018, Tawesco's project team was challenged to produce components for forklifts for a major global player, Kion. After the experiences with the previous project at John Deere, it was decided to find a suitable technological partner who could help automate the entire welding process.

Michal Raška, head of the investment department at Tawesco, says: "When looking for a suitable partner, we came across Valk Welding. After several meetings and discussions with Richard Mareš (senior technical advisor at Valk Welding), we concluded that gaining inspiration from companies that deal with these projects daily would only be beneficial. The technologies offered by Valk Welding, such as a functional system for eliminating inaccuracies in production preparation, advanced programming methods, and the general approach focused on the technology itself, appealed to us from the beginning. After a series of tests at Valk Welding's demonstration centre, we were convinced that we were in the right place."



Welding of sheet metal subsystems

Welding of warehouse components

From left to right: Richard Mareš, Senior Sales Engineer at Valk Welding, Martin Krupa, Investment Director at Tawesco, Michal Raška, Head of Investment Department at Tawesco.

TAWESCO PROMET GROUP
member of PROMET

The Tawesco team realised, after all previous experiences, that the requirements for robotic arc welding of large and heavy parts in small series differ from those for welding smaller components in mass production. The preparation and accuracy of production, the concept of welding jigs, and the programming of the robots require a specific approach that suits the nature of this production.

This marked the beginning of the long-term cooperation between Tawesco and Valk Welding in the field of MIG/MAG welding robotization.

Solutions suitable for projects of this type
In the following years, this cooperation deepened with further deliveries of robotic systems for new projects. The latest delivery from Valk Welding took place in 2024 in the form of two robotic systems, significantly reducing the production costs of previously manually welded parts once again.

Effective cooperation between companies
"The gradual development, the introduction of innovations, and the experiences gained with the operation of five robotic systems from Valk Welding have confirmed to us over the past seven years that robotic welding is also effective for small-scale production," says Tawesco's investment director, Mr. Martin Krupa. He adds: "Thanks to these modern technologies, we can also stably automate smaller series with the required high and consistent quality. This approach is an integral part of our vision - to be a respected family business that builds strong and long-term partnerships through innovations and complete solutions."

www.tawesco.cz
www.valkwelding.cz

Wolf System GmbH revolutionises production with first welding robot from Valk Welding

Germany

Wolf System GmbH, an internationally operating company known for its innovative construction and hall systems, has recently taken a significant step towards production automation. With the introduction of a state-of-the-art welding robot from Valk Welding, equipped with the groundbreaking ARP powered by ArcNC software for Panasonic and the innovative VWPR-FE extraction torch, the company is elevating the efficiency, precision, and safety of its manufacturing processes to a new level.

ARP powered by ArcNC for Panasonic: Revolutionary software for efficient welding

The new welding robot from Valk Welding is not only a technological highlight but also a symbol of progress and innovation. The core of this investment is the ARP powered by ArcNC technology for Panasonic, a revolutionary solution that significantly simplifies the programming process and opens more possibilities for accuracy, speed, and durability in robotic welding. The software offers the following advantages:

- Automatic Weld Seam Detection: ARP powered by ArcNC independently identifies weld seams and suggests best-practice strategies.
- Flexibility through Customisation: These suggestions can be manually approved or adjusted according to individual requirements.
- Autonomous Program Creation: Once adjustments are complete, the software automatically calculates a robot program that is immediately ready for use.

Edgar Schenknecht, Quality Management Representative for Steel Construction at Wolf System GmbH, emphasises the strong collaboration with Valk Welding: “The partnership with Valk Welding was outstanding. We were particularly impressed by their punctuality and the professional execution of the installation. Everything went smoothly and according to plan – truly commendable effort.”

Fabio Fortunato, Robot Programmer and Welder at Wolf System GmbH, is also enthusiastic: “Operating the welding robot with ARP powered by ArcNC is so intuitive and comfortable that you almost forget how to manually control the robot with the teach pendant. The software really takes a lot of work off your hands.”

VWPR-FE extraction torch: Compactness meets impressive performance

Another highlight of the new system is the VWPR-FE extraction torch from Valk Welding. This specially developed torch is characterised by its compact design and unique extraction performance. The combination of these features enables efficient capture of welding fumes directly at the source without restricting the robot’s mobility.

- Compact Design: The VWPR-FE is designed to integrate perfectly into the robot’s welding operations without compromising workflow flexibility.
- Outstanding Extraction Performance: The torch’s innovative technology ensures almost complete capture of welding fumes, significantly improving workplace safety and air quality in the production hall.

Outstanding benefits for Wolf System GmbH

The implementation of the welding robot, the integration of the VWPR-FE, and the use of ARP powered by ArcNC for Panasonic bring numerous benefits to Wolf System:

- Increased Productivity: The automated programming process and the smooth welding work of the robot allow for faster and more efficient job processing.
- Improved Working Conditions: The VWPR-FE significantly reduces welding fumes, improving air quality, and making the work environment safer.
- Quality Improvement: The weld seams meet the highest standards, while the extraction torch ensures that no contaminants affect the welding quality.
- Cost Efficiency: The reduction of errors, efficient extraction, and optimised resource use contribute to a significant reduction in production costs.

A strategic step towards industry 4.0

With this investment, Wolf System GmbH is making a strong statement for the future. The welding robot is a vital component in the company’s strategy to adopt modern automation solutions and continuously develop its production processes. The introduction of this technology shows how important it is for companies to adopt innovative solutions early to remain competitive in the long term.

Conclusion

The introduction of the first welding robot from Valk Welding at Wolf System GmbH marks the beginning of a new era in manufacturing. With ARP powered by ArcNC for Panasonic, automatic programming, and the innovative VWPR-FE extraction torch, the company has not only optimised its production processes but also taken an important step towards the future.

Edgar Schenknecht summarises it: “Without the innovative ARP powered by ArcNC solution, the precise calibration of the system, and the impressive extraction performance of the VWPR-FE, such progress would not have been possible. This investment shows that Wolf System is ready to face the challenges of the future.”

With this investment, Wolf System GmbH impressively demonstrates how automation, efficiency, and occupational safety can go hand in hand to lay the foundation for sustainable success in an ever-changing industry.

www.wolfsystem.de

ARP

“This investment shows that Wolf System is ready to face the challenges of the future.”

Timars AB goes for premium

Sweden

With the transition from a traditional mechanical workshop to a supplier of state-of-the-art products under its own brand name, Swedish company Timars AB has invested significantly in modernising its production facility, improving workflow efficiency and robotised welding production. “Valk Welding delivered an ultramodern welding robot installation with automatic programming, which enhances our production flexibility to meet the increasing market demand,” says CEO Fredrik Janstorp. “With Valk Welding, we have chosen premium.”

Timars AB focuses on three specific business areas: container handling, transportation and industrials . Each product group is optimally served by its own salespeople, who have extensive product and market knowledge of the specific industry, while production for all business areas comes from a single central production facility. “In our long-term strategy we expect strong growth, aiming to double the group’s turnover by 2030,” continues Fredrik Janstorp.

Labor shortage in the welding department
In addition to development, Timars focuses on design, welding, assembly, and manufacturing, where semi-finished products are more frequently outsourced to subcontractors. Timars collaborates closely with the local schools, yet the shortage of new welders is a problem for growth.

“Valk Welding could offer us both the hardware and software, installation, training, service, and welding wire as a turn-key solution. This meant one partner for the complete picture with an interesting delivery time.”

- CEO Fredrik Janstorp

ARP

“Welding production is one of the major challenges we face,” says the CEO. “Welding automation seemed like a logical step, but we didn’t want to get bogged down in days of programming. Extensive research led Timars to collaborate with welding expert Yngve Saarela, resulting in a partnership with the European welding integrator Valk Welding. Visits to Hammar Maskin and meetings at the Elmia trade fair confirmed this as the right choice.”

Turn-key solution
“Valk Welding could offer us both the hardware and software, installation, training, service, and welding wire as a turn-key solution. This meant one partner for the complete picture with an interesting delivery time. Of course, we also approached other integrators, but Valk Welding seemed large enough for such a project and small enough to keep the lines short.”

Programming with the ARP software
“Since we don’t do mass production, short lead times from design to final product are crucial. In this regard, the programming time for the welding robot is decisive. Valk Welding offers an automatic programming solution where we upload our 3D drawings to a cloud environment, and the programs for the welding robot are automatically generated. This allows us to deploy the welding robot quickly and flexibly, both for single items and small quantities,” explains Fredrik Janstorp.

Robot relieves employees
Apart from all the efficiency benefits, Timars sees the use of a robot as a great advantage for its employees, for whom welding construction parts often involves significant physical effort.

“All in all, this investment solidifies our position as a reliable, safe, and customer focused industry leader, making us even more competitive and ready for further growth, delivering value through cutting-edge technology and efficient production.”

www.timars.se

Can the automation of your welding process start small?

In an era where automation is increasingly becoming the norm, many companies face important decisions. It is understandable that questions arise: Is our production large enough? What about the costs of an industrial welding robot? Do my employees have the right skills?

Automation can start small, without the need for complex systems. With the Table Cell solution from Valk Welding, you can get started for just €69,999. This technology is designed to grow with your company.

The Table Cell from Valk Welding is equipped with the Panasonic TM-1400 WG, the ARP automatic robot programming software, and a robust welding table on which products can be easily positioned. After just four hours of training, operators can start using the system.

Panasonic TM-1400 WG
The Panasonic TM-1400 WG is a technological marvel. It has a large reach and is robust. The integrated power source, an essential part of the Panasonic welding robots, ensures that movements and welding processes seamlessly align, enhancing the quality and productivity of the welding work. Whether you are working with steel, aluminium, or stainless steel, the Panasonic WG power source delivers perfect welding results for any material.

ARP: Automation for Everyone
ARP, or Automatic Robot Programming, almost completely automates the offline programming process of industrial welding robots. With ARP, even people without programming experience can program a Panasonic welding robot. The system analyses 3D CAD/STEP files, identifies weld seams, and recommends welding positions and sequences. After approval of the proposed sequences, the ARP software automatically generates the complete welding program, including all search movements to automatically compensate for product deviations.

The Table Cell offers a solution that improves the quality and consistency of your welding work, thereby also reducing production time. The payback period is less than one year! Your experienced welders, now free from repetitive tasks, can focus on more complex and creative projects.

“Your first welding robot paid back in less than a year.”

ARP

25 Years of Valk Mailing

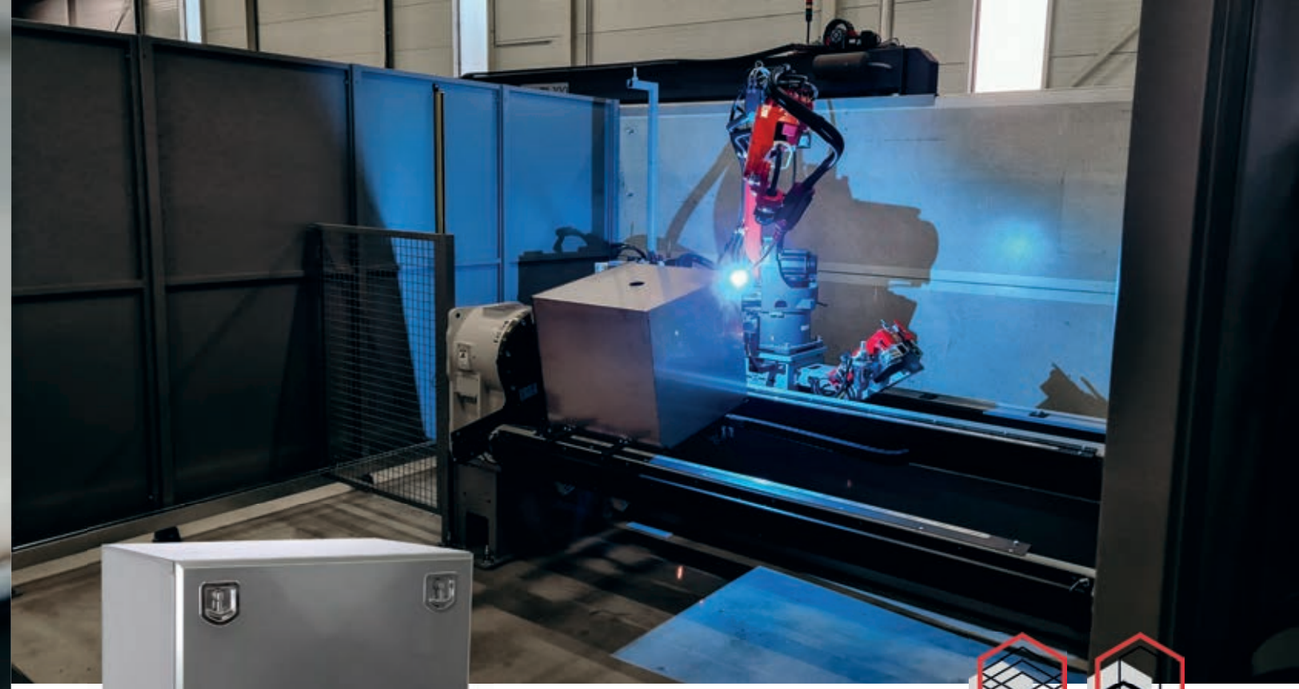
We proudly celebrate the 25th anniversary of Valk Mailing! For a quarter of a century, we have been bringing you interesting stories and the latest information about the welding industry. Whether this is your first Valk Mailing or you have been receiving it for 25 years, thank you for your support and engagement!

“Within 30 seconds, we have a welding program ready for a box.”

Tilbox shortens route from order to welding robot

The Netherlands

The Valkenswaard-based supplier of upper and lower toolboxes for trucks and trailers is investing in further automation of its production process. As a next step, Tilbox has implemented a Valk Welding robot with an automatic programming system, significantly shortening the workflow from work preparation to welding robot. “Within 30 seconds, we have a welding program ready for a box. The extra capacity has allowed us to shorten delivery times on this line. This way, we produce more intelligently and serve the market better,” says Dion van Dommelen, the system engineer responsible for the renewal process.



DTPS QPC

Trucks and trailers are often equipped with a toolbox to safely store tools. “Although bodybuilders can make a box themselves, they still order from us because we can do it faster and cheaper due to our specialisation. However, orders are often placed only when a customer knows how much space is left. Delivery time therefore plays an important role. It often involves single pieces or small quantities. In addition to customisation, there is usually a high degree of standardisation, with mainly width, height, and depth varying.”

With the welding robot or manually?

“We already weld standard boxes on a welding robot based on a number of fixed programs. In the case of a different size, adjusting the welding program takes so much time that the decision to weld manually was quickly made. We wanted a way to quickly create welding programs. The question was which player in the market could help us with this. Valk Welding had experience with this and could show, based on previously realised projects, how you can adjust existing programming blocks within QPC with macros, so you don’t have to reprogram every recurring operation,” continues Dion.

Quick Programming Configurator (QPC)

QPC is Valk Welding’s own software development, specifically designed to simplify and even automate the programming of the welding robot within product families. As soon as a customer places an order via Tilsmart, the information is known, and the program can be generated using QPC software. Repetitive operations are recorded in macros from the main program. By reading the macros into the DTPS programming system for Panasonic welding robots, a program for the welding robot is often ready within half a minute. This results in significant time savings in work preparation. Tilbox has developed an online tool that allows customers to configure their box. Once the order is placed, the data is sent to the robot. Using the QPC software, a program can be quickly generated, and the order can be produced. If you want to know more about this software solution, read page 18.

See also: https://www.tilsmart.com/products

TRACK-FRAME-E with 2 clamping stations

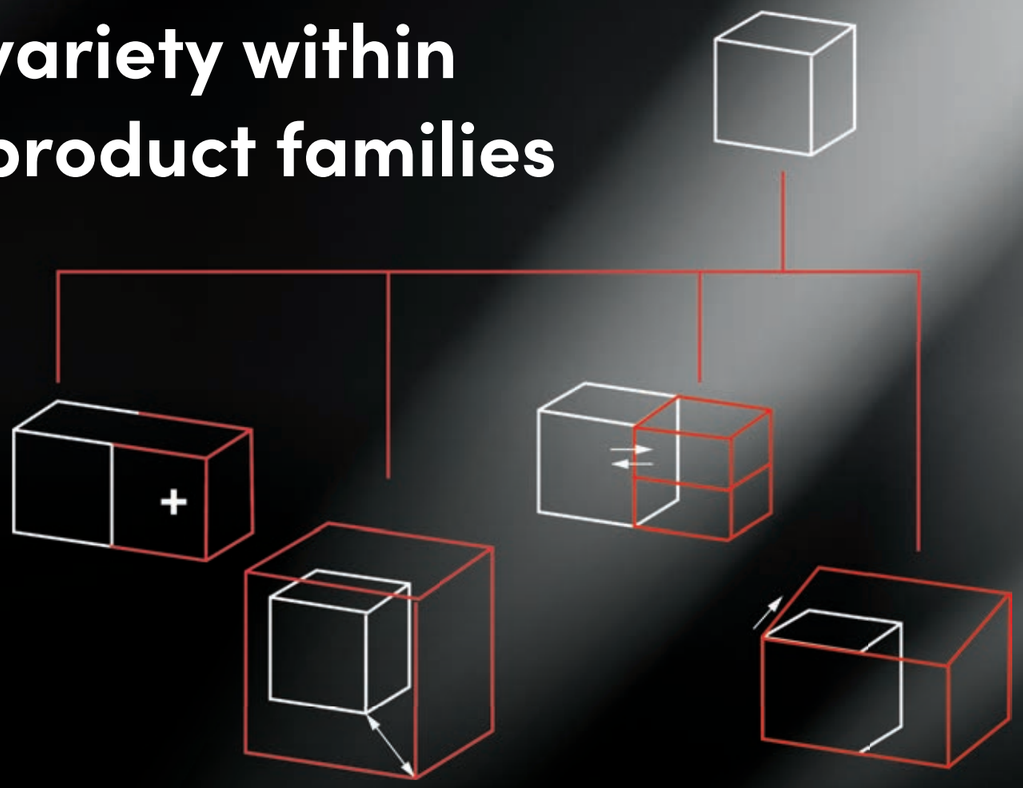
The system installed by Valk Welding consists of a Panasonic welding robot on a track that serves 2 clamping stations, each with a manipulator. The manipulator is suitable for certain types of boxes that fall within a specific range. About 90% of these types of boxes fall within the range, with a few exceptions being welded as before.

Responding to further growth

“We want to continue growing by optimally supporting our customers with our service and products. Our online ordering tool not only provides extensive information but also makes the ordering process simpler and more efficient. Moreover, the investment in our new welding robot system ensures that we remain flexible and ready to realise the increasing production capacity,” concludes director Gertjan Grimbergen.

www.tilbox.nl

Automatic robot programming for a wide variety within product families



Automatic Robot Programming (ARP) often seems out of reach for companies with a wide variety of products within the same product families. It is often thought that each variant of the product requires its own welding programme to be programmed.

The Quick Program Configurator (QPC) software, developed by Valk Welding, changes this. QPC applies automatic robot programming specifically in situations where there is a wide variety of products within the same product families.

How does QPC work?
By using parametric data, QPC can quickly and accurately generate programmes for different product variants, regardless of complexity or specifications. This means that companies are no longer stuck with standard programmes for every variation of the parent product, but can instead dynamically generate customised welding programmes, sometimes within 30 seconds. Whether it involves adjusting the length, width, or other parameters, QPC ensures that each product within the family is manufactured with the same precision and quality.

ARP QPC

Parametric data
Necessary for automatically generating robot programmes with QPC are the parametric data and the setup of the database. In this database, a parent programme is created based on the already known parametric data. This includes welding parameters as well as information about fixed spacings of elements, types of welds, the number of angles, and/or torch positions.

The QPC software can then automatically generate robot programmes by scaling, expanding, and extending the parent programme until it meets the requirements of the specific workpiece to be welded. In the case that a product contains various elements with a fixed spacing, the QPC software will calculate the number of elements based on the entered total length and will add the correct welds for all elements to the total programme.

QPC interface
QPC can be integrated into the production process specifically for the customer. The software can be implemented with an interface where the operator enters the correct dimensions of the product to be welded on a screen next to the robot installation, after which QPC directly calculates the welding programme. However, QPC can also play an important role in further automation of the production process.

Think of (automatically) scanning a QR code that contains the necessary information for QPC. After scanning this QR code, the QPC software will immediately start generating a welding programme for that specific product based on the entered source data.

Tilbox
One of our customers, the company Tilbox from Valkenswaard, uses QPC daily for the production of upper and lower boxes for trucks and trailers, where programmes can be generated within 30 seconds. Curious about their experience? Read the story on page 16.

Advantages of QPC at a glance:
- Shortest possible cycle time
- Maximally optimised programmes
- No programming time
- Based on textual data of a product
- Can use parametric data from CAD software
- Various input options:
  - Manual
  - Loading parameters
  - Scanning QR code

Robotics in the demanding railway industry

Poland

The company Wagon Service Ostróda Sp. z o.o. (WSO), part of the GATX group, is involved in the production, repair, and modernisation of freight wagons and the regeneration of wagon components. Their main specialisation is railway tank wagons. The factory in Ostróda has been in existence for approximately 150 years. Currently, the company has branches in Ostróda and Płock and employs 350 workers.

Towards robotics

"The railway market has been changing very dynamically lately. Given the limited availability of qualified production workers, rising labour costs, and the continuous increase in quality requirements, we believe that automation of production processes in this sector is inevitable," says Marcin Ostrowski, head of the technological and construction department.

WSO has decided to acquire a welding robot based on a TRACK-FRAME-E rigid frame with a robot that moves along a track and serves two workstations on one side of the track. This system allows a wide range of products to be welded, such as parts of larger structures.

"Our welding robot covers the entire need for welding the load-bearing elements of a wagon frame, such as pivot beams and frontal elements. Additionally, we weld various small frame elements," adds Tomasz Baworowski, technologist and robot programmer.

The delivered installation fully meets the current production needs of the WSO factory, eliminating manual welding of various components.

Major changes at the beginning

Any company that has not previously had experience with automated welding must be prepared for certain organisational changes when implementing a first welding robot installation. For WSO employees, the period just before the robot installation and the first weeks after the start of series production were the most challenging. It was then that they had to pay the most attention to refining production, such as training new employees and improving welding programmes.

"We chose to appoint young employees without experience in manual welding as operators. At every stage of production, there was someone with experience present, who supported the implementation process and simultaneously trained new employees. The new process was quickly and efficiently implemented, and the employees adapted quickly to the new requirements," notes Marcin Ostrowski.

"The automated installation has been used at WSO for over a year now, and so far, we have had no problems with its operation. We want to emphasise the very good communication with the service and programmers of Valk Welding. Valk Welding responds quickly to notifications and helps solve problems remotely, avoiding production downtime"

- Tomasz Baworowski

DTPS

Perfect result

Wagon Service Ostróda places great emphasis on the production of high-quality products. Products prepared for the welding robot are previously assembled on specially prepared jigs and manually tacked using the TIG method. On the robot, universal jigs are used based on perforated welding tables. This way, the system can be easily converted for different applications.

New programmes created at WSO are programmed offline in the DTPS software, so production is not interrupted. This software is very useful for editing and creating new programmes.

Despite the precise preparation of the products, WSO uses Quick Touch Sensing and the Arc Sensor to detect even the smallest deviations in the shape of the welded product. This ensures that the product welded by the robot meets strict quality standards.

The importance of perfect wire feeding in MIG welding of aluminium

In the realm of Metal Inert Gas (MIG) welding, the precision of wire feeding is extremely important, especially when working with aluminium. Traditionally, welding wire is supplied on small spools, a method well-known but often inefficient due to the frequent need to change spools once they are empty. This process consumes valuable production time, particularly in automated welding environments.

For materials such as steel and stainless steel, using wire in drums has become a common solution to this issue. However, this practice is not yet widespread for aluminium welding. The primary challenge lies in the unique properties of aluminium welding wire. Unlike steel, aluminium wire lacks “memory” and adapts itself over time to the shape of the drum. This can cause the wire to twist and resist movement through the cable assembly and torch, leading to difficult wire feeding and instability in the welding arc, ultimately resulting in welding defects.

Recognising this challenge, Valk Welding has developed an innovative solution to enable the use of aluminium welding wire in drums. This advancement addresses the specific issues associated with aluminium wire, ensuring smooth and consistent wire feeding.

The vast majority of existing solutions are based on mechanically straightening the wire which can solve one problem but create others down the line(r). These solutions often require heavy bi-axial straightening, which increases the load on the wire-feed motor and extend wire change-over times. Or they involve sensitive mechanical equipment being less robust in production environments. On top of that there is no “best practice” and a lot of “trial and error”

To achieve perfect aluminium welding from drums, Valk Welding has developed an effective solution to combat the persistent issues without “touching” the wire while highly robust for manufacturing environments. A truly innovative solution where the companies leading welding robot technology and welding wire knowledge are seamlessly coming together.

Getting curious? Contact us for more information.

BC Maskiner is using the V3L5 HD Super welding wire. The ideal steel welding wire for robotic applications. Provides the best possible weld surface finish, reducing the need for post-weld cleaning and thus optimising production efficiency.

High welding quality welding robot is a game changer for BC Maskiner

Denmark

The Danish machine builder BC Maskiner ApS transitioned from developer to producer last year. “Where we previously produced only small series per design, we now had to scale up to several hundred units. This made the switch from manual to robotic welding inevitable. A high-end system from Valk Welding perfectly matched our needs, and their support helped us get started. After just one year, we see a doubling in production,” says Mikkel Christensen, who heads the welding department.

BC Maskiner ApS specialises in the development and construction of forestry machines. “One of our biggest customers is Greentec, for whom we make many parts for their machines, while they handle the assembly and mechatronics themselves. Annually, this amounts to around 1,500 machines per year. We do this with 10 employees, four of whom work in the welding department. The welding process is therefore the most crucial link in the entire production process.”

Solving the shortage of skilled welders

“In addition to the fact that the quantities we produce are hardly achievable with manual welding, a shortage of skilled welders was also an important reason to switch to robotic welding,” Christensen explains. “No one within the company had experience with robotic automation. As a mechanical engineer, even my welding knowledge was limited. Yet, after a two-week training at Valk Welding DK in Middelfart, I programmed the first parts for the robot myself. Programming a part and then seeing it welded by the robot is really cool.”

FRAME-E setup

Valk Welding supplied a welding robot installation in a TRACK-FRAME-FRAME-E setup with two 4-meter workstations placed side by side. “Given the maximum length of most parts, this was the most obvious setup.” For the steel parts, BC Maskiner also uses the solid Valk Welding welding wire from the Welding Wire Service Centre.

Varied work

The welding time on the robot ranges from 30 to 60 minutes per part. “This is easy for one operator to keep up with. While the robot welds at one station, the welded part is swapped at the other station. In between, the operator can tack the parts and manually weld other parts. This way, the work remains varied and interesting for the operator, and the welding robot does not demand all the attention.”

Higher quality, game changer

“Although the welding robot is not yet fully occupied, the investment has already had a considerable impact. Not only has the output doubled, and the speed of the welding robot is twice that of a manual welder, but the consistently high welding quality is the real game changer for us.”

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BC Maskiner

Comebo Industries welds complex chassis in very small series

France

Comebo Industries has chosen Valk Welding as their partner for their current and future investments in robotic welding of large chassis. This resulted in the installation of a welding robot in 2020 and another in 2024.

We are located in Clazay, a village that is part of the municipality of Bressuire, situated 35 kilometres southeast of Cholet. In this green landscape, Comebo Industries has built its reputation. “The Coopérative Métallurgique du Bocage was founded in 1970 in Bressuire by seven founding partners. From the beginning, the company focused on welding with a clientele of large industrial companies,” recalls Jérôme Mathieu, CEO of Comebo Industries.

The first cell developed by Valk Welding for Comebo Industries is based on a suspended robot on a gantry, for dimensions up to 5 metres, instead of 3.2 metres with the previous machine.

The activities of the cooperative production company (Scop), where the sixty employees are also shareholders, nowadays revolve around sheet and bar processing (laser cutting, drilling, bending, rolling...), welding (manual MAG welding, robotic welding, and spot welding), and painting. The company produces chassis and other structural elements - robust parts consisting of dozens of components, sometimes even 200 or 300 for certain references - for agricultural machinery, warehouse equipment, lifts, airport equipment, etc., which are sold worldwide.

Comebo Industries invested in robotic welding more than two decades ago. “However, we were faced with the ageing of two of our five machines, which have been operational since 1999, leading to a loss of original precision. Besides restoring the original capabilities, we also wanted to take the opportunity to modernise the machinery,” emphasises Jérôme Mathieu. Thus, the company chose Valk Welding in 2019 for a first welding robot, followed by a second installation in 2024.

Expanding capabilities to 5 metres

One of the arguments in favour of Valk Welding is that they are specialists in welding and can provide advice on how a particular part should be welded, rather than just acting as equipment sellers. As a family business, the manufacturer has a long-term strategy and an identity close to that of Comebo Industries. The historical partnership between Panasonic and Valk Welding also played a significant role in the decision, as it guarantees strong integration and deeper exploitation of the welding source and the robot.

The first installation has a suspended robot with a gantry, to optimise the depth of the space. “Because the machine is near an entrance, there had to be enough space left for passage,” says Jérôme Mathieu. Another advantage of this robot is better accessibility of the torch, allowing it to access tight spaces from above. The second welding robot installation is a TRACK-FRAME-E.

These solutions distinguish themselves from the previous machines by options that ensure the weld seams are correctly positioned and compliant (wire searching, seam tracking). Because the parts are manually tacked in a jig using tack welding, there are small deviations, albeit within tolerances. Without these options, along with those of the cutting or bending processes, these deviations could affect the repeatability and compliance of the robotic welding.

Jérôme Mathieu, CEO of Comebo Industries: “Offline programming is an important criterion for us, as we cannot afford to have the robot idle for three to five weeks to realise the programme for the most complex parts.”

Thanks to this investment, Comebo Industries was able to meet the demand to produce even larger parts. “We were limited to 3.2 metres, whereas we can now go up to 5 metres with the first installation and 4.1 metres with the second. The first machine even allowed us to integrate a new complementary product that we previously could not make,” explains Jérôme Mathieu.

Besides the near-complete elimination of post-processing (removing splatter, repairing welds...) thanks to the now clean and precise welds, there was one last factor that influenced the choice for Valk Welding. “The offline programming was more advanced than with the other manufacturers consulted, and Valk Welding invests heavily in this subject. This is an important criterion for us, as it takes three to five weeks to realise the programme for the most complex parts and we cannot afford to have the robot idle for that long,” explains Jérôme Mathieu.

www.comebo.fr

The strong connection

Let’s connect at shows

Schweissen & Schneiden
15.09 - 19.09 (DE)

Alihankinta Subcontracting
30.09 - 02.10 (FI)

Hi Tech & Industry Scandinavia
30.09 - 02.10 (DK)

Sepem Anger
07.10 - 09.10 (FR)

Metavak
07.10 - 09.10 (NL)

MSV 2025
07.10 - 09.10 (CZ)

K-Fair
08.10 - 15.10 (DE)

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21.10 - 24.10 (DE)

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