



(from L to R): Henk Visser and Remco H. Valk from Valk Welding, Alexander H. and Henning H. Fliess and Olaf Penning from Fliess GmbH

## Fliess: partner in welding wire for high-strength steel



NETHERLANDS

### Also in this issue:

- Fliess excels in niche market special welding wire types .....2
- Högans Verkstad installs 2nd installation .....3
- Frisomat replaces welding robot in modernisation project..... 4-5
- Welding robots help greenhouse builder to grow further ..... 6-7
- Robot welds complete cabinframes at Sekura Cabins .....8
- Production cell for IB Andresen Industri A/S.....9
- PEaPE METAL welds motorcycle frames for Peugeot..... 10-11
- Cutting specialist DCoup Laser expands with robot welding .....12
- 20th anniversary "Strong Connection" partnership with Van Hool .....13
- Production triples at Benekov boilers..... 14-15
- Welding aluminium scaffolding with Active Wire Aluminium .....16
- Duty cycle of welding robots increased with intelligent planning .....17
- Metal-Fach chooses the technology and know-how of Valk Welding..... 18-19
- Panasonic congratulates Valk Welding with 30 years collaboration .....20
- Tradeshows ..... 20

**Valk Welding and Fliess will be collaborating more intensively in the field of welding wire for high-strength steel. Fliess GmbH is a manufacturer of special kinds of welding wire for specific purposes, among which welding wire for high-strength steel. Valk Welding sees, with the delivery of welding robot installations, a growing demand of robotised welding of constructive products from high-strength steel, and wants to be able to deliver matching high-quality welding wire for this purpose.**

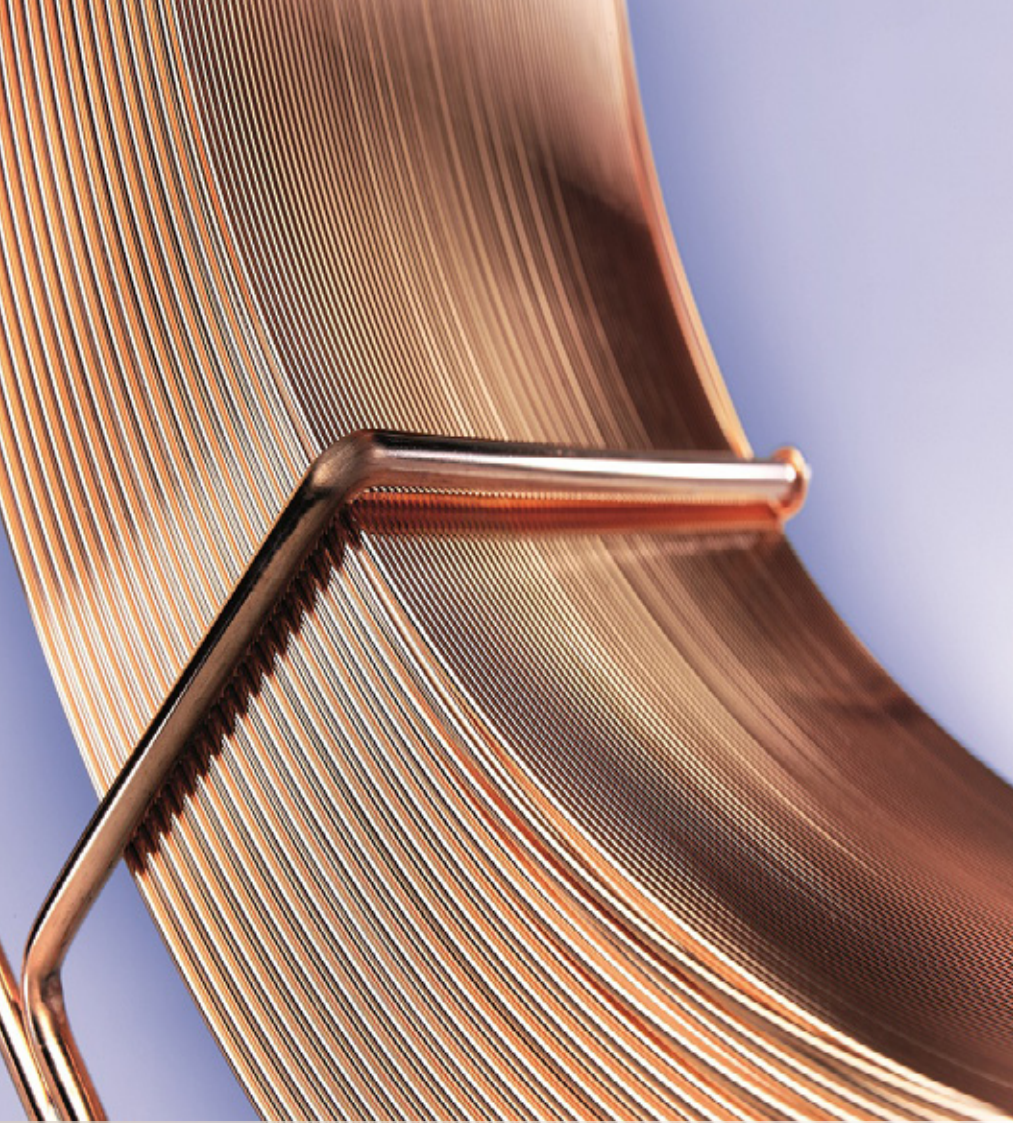
Remco H. Valk: "Since the use of high-strength steel increased, the development of special wires and the use of it also increased. By delivering welding robot installations and welding wires for high-strength steel as one concept for these applications, we can give our customers a high-quality solution. In the meantime, we already delivered welding robot installations with the high-strength welding wires of Fliess to multiple customers, among which the crane construction industry (mobile cranes) and trailer construction for heavy transport."



continued on page 2 ➔



The strong connection



➡ continued from  
frontpage



GERMANY



The huge stock and the quality management during the process is the power of the company. The wire rods that the steel factory compiles, melts, are delivered in heat codes of 150 to 170 tons. Alexander H. Fliess: "We arrange a customer-specific recipe for each heat code, for which we first make a test beforehand to make sure the heat code meets

## Fliess excels in niche market special welding wire types



The German manufacturer of welding consumables Fliess GmbH is highly regarded as a producer of welding wires, particularly for alloyed steels with a higher tensile strength. The company has been active in this field for over a 100 years and introduced welding wire on spools as one of the first in the sixties. Right now, Fliess has almost 6,000 tons of base materials in stock, consisting of fifty different kinds, from which the welding wires are drawn to the desired diameters in-house.

the desired specification a 100%. Strict quality control is a standard part of the process, that is being repeated after every step in the process. Our customers desire a very high level of safety, so we cannot afford the risks of material exchange or deviations in quality."

### Welding wire for high-strength steels

Simultaneously with the development of high-strength steel in the past 40 years, Fliess has also worked on the development of the recipe for alloyed steels with a higher tensile strength. Alexander H. Fliess: "Only in the past 6 years the sale of these products has got really into gear. Once a customer has determined a specification, it will always have to be delivered at the same quality. Their suppliers are then also prescribed that specific quality. We can deliver within 2 weeks from the base material. We can even deliver the next day if we have the welding wire on the coil or in a barrel in stock. This way, we build sustainable customer relationships."



### Family business

Fliess is, just like Valk Welding, a family company, where Alexander H. Fliess as the fourth



SWEDEN



## Höganäs Verkstad installs 2nd installation

**An order for the replacement of steel structures for signal structures above the highways was a reason for the Swedish supplier Höganäs Verkstad to invest in welding robotisation in 2016. De high level of difficulty, which had been an obstacle for other suppliers so far, was a challenge for CEO Dag Richardsson. Since Höganäs Verkstad succeeded at welding the steel structures certified with the robot, the company soon faced a capacity shortage. Last summer, Valk Welding delivered a second, identical installation.**

The existing constructions for the syteel structures did not meet the latest EU standards. Dag Richardsson: "Also because we are one of the few that can weld EN-1090 certified, we acquired the order in 2016. Given the amount and the great variation, we started to delve into welding robotisation. We did not have any experience with that ourselves yet, and in addition, the product was complex for the welding robot."

### High level of difficulty

The part that caused the high level of difficulty was mainly the large tolerances around the connections of the bars on round tube profiles. "You can fix that roughly manually, but the opening is too big for a welding robot. Together with Valk Welding DK, we looked for a solution. We now search on multiple positions with the gas nozzle and we switched to wire sensing (Quick-Touch). With that, we now also meet the high requirements of welds with enough penetration," Dag Richardsson explains.

### Expanding capacity

Thanks to the short cycle time, of an average of 1 hour per beam, the welding robot pro-

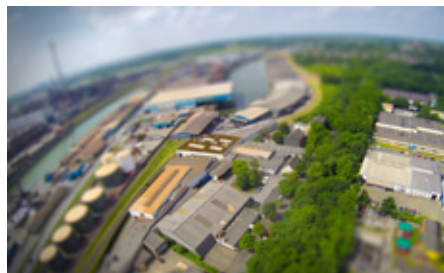
duces four to six times more in comparison to manual labour. With that, the production output could be increased considerably. The welding robot cell now operates 75 hours per week. However, it was soon discovered that the occupancy rate of the welding robot installation was so high, that Höganäs Verkstad faced capacity problems. "For the time being, we are saved by a second, identical cell, and there is still space to also let other workpieces be done by the robot."

[ *The output of the welding robot is four to six times higher in comparison to manual labour* ]

### Preserve production

"Thanks to the welding automatization, we can compete with low-income countries like Poland. It is a big advantage for our customers to work with a Swedish supplier because they automatically get a better control over the logistics, the quality and the lines of communication are shorter.", Dag Richardsson emphasizes.

[www.hoganasverkstad.se](http://www.hoganasverkstad.se)



generation conducts the management with Dr. Albrecht Borner and Olaf Penning. Alexander H. Fliess: "Certainty for the future is in the blood of every family business. Feelings and pride play an important role. Both for employees and our customers, that is important for the continuity."



Alexander H. Fliess:  
"We focus on quality"

### Intensify collaboration

Fliess focuses on the production, while Valk Welding has a more intensive contact with the market. Remco H. Valk: "Together with Fliess, we want to anticipate on the growing demand of special welding wires for high-strength steel. Because of the short lines with Fliess, we can react flexibly and give optimal advice and support to our customers."

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

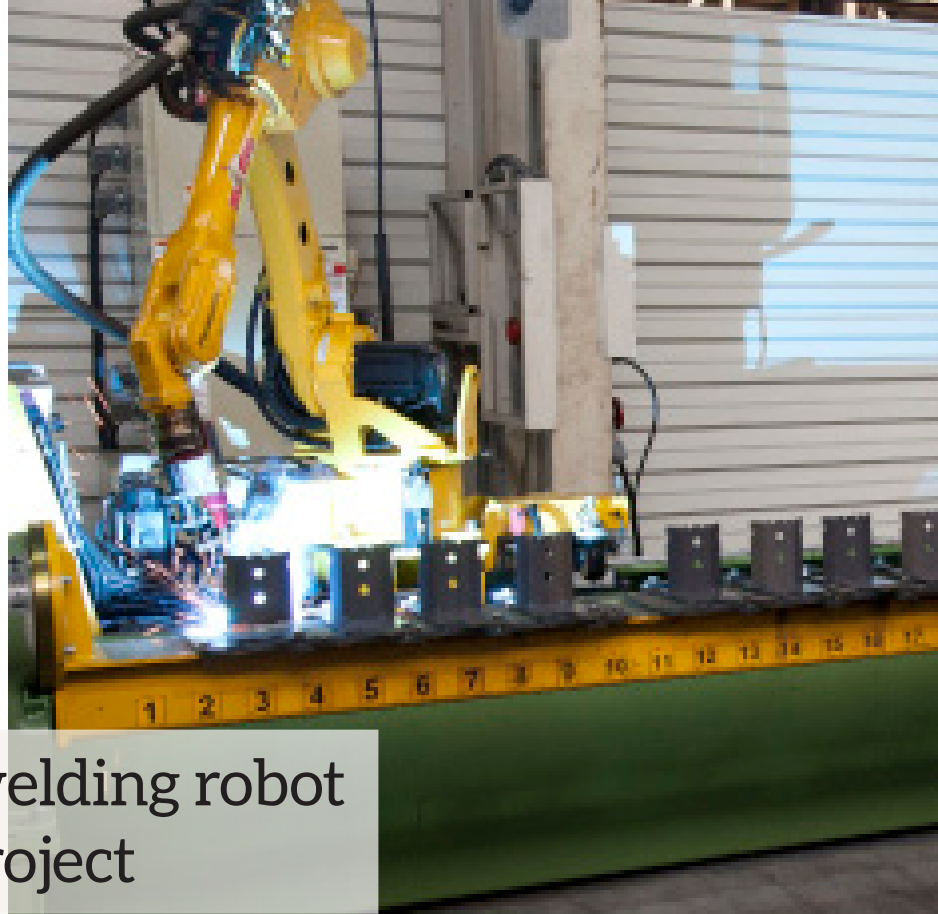




BELGIUM

**FRISOMAT**<sup>®</sup>

Innovators in steel buildings



## Frisomat replaces welding robot in modernisation project

**Frisomat, a manufacturer of steel buildings, aims to double its turnover in 5 years. To achieve that target, the production site has worked hard on automation of the production process and upgrading a number of crucial production components over the past few years. Replacing 2 IGM welding robots with Fronius welding sources with a Valk Welding welding robot system is one example. Production Manager Gunther Vergauwen said “This single welding robot has a higher duty cycle and output than the 2 IGM welding robots and we are more flexible with making different combinations.”**

The 40-year old company, founded by its current CEO Guy Somers, is well on its way to achieving its objectives. With short lead times, high construction speed and delivering a complete and easy to transport kit, the company has seen a major rise in order. Frisomat has its main production site in Belgium and makes all components - from pillars to girders to facade elements in house. Unlike most, Frisomat produces most construction components from cold-rolled galvanised steel rather than from hot-rolled profiles. It weighs less and recesses and holes can be created in the profiling line.

### The welding process needed to become more efficient

The construction components need to be fixed with nuts and bolts to the welded connecting pieces on the building site. By using a Panasonic AW 7000, Frisomat took the first step towards welding robotisation already back in 1991. Following strong growth, this robot was replaced by 2 IGM robots with 2 stations each. Gunther Vergauwen commented “As such those robots did their work properly, but the programmes weren't exchangeable and

for a large series it was not possible to use all 4 stations for the same workpiece. We were short on flexibility. Furthermore, we wanted to integrate work planning for welding production into the digital control of the production. Offline programming is a better match. At the level of technology and efficiency we were ready for modernisation at that time.”

Valk Welding approach appealed to us Gunther Vergauwen saw the videos of the welding robot system on the Valk Welding YouTube channels and visited a number of references in Belgium. “I was particularly impressed by the systems I saw at the Van Hool plant. The Valk Welding approach is extremely professional, during the project approach, and during start-up and programming.”

### Welding robot on E-frame and DTPS

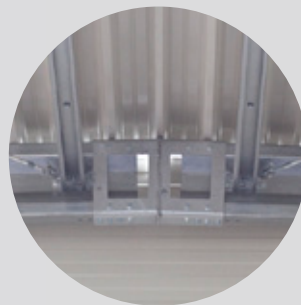
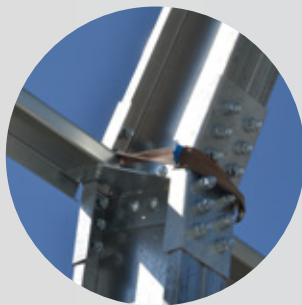
Last year, both IGM robots were replaced by a completely new system, consisting of one Panasonic TL-1800WG3 welding robot on an E-shaped frame, where the welding robot moves over a track and serves 2 workstations.

Gunther Vergauwen continued “We modified all the welding fixtures because of a different attachment method. That was also the right time to change to a new type of connecting piece. We can now use both stations for the same or for different components. With the short conversion period we are now much more flexible. We use the new cell in 2 shifts, which guarantees better use of the production capacity. We now weld more parts on the welding robot as before on the 2 IGM systems and therefore we need less manual welding. It is noticeable that with the Panasonic welding technology the welding quality has improved significantly and with less projections we have almost no finishing work to do.”

### Off-line programming matches digitisation

The entire Frisomat production process is controlled by work planning. All the operators receive production orders from ERP at the workstation and no longer have to programme the machines. “It prevents errors in sizing or holes at the wrong positions. The connecting pieces that were previously programmed at





the robot are now programmed by the office. The operator only performs any required fine-tuning." Besides 4 operators, 3 welders also attended the course at Valk Welding to learn to work with the offline programming software DTPS. "Welding experience is a prerequisite, because you need to know the best welding sequence and in which position you need to programme the welding torch," explained Gunther Vergauwen.

### Move to high-strength steel

More and more construction components are now made of high-strength steel S550, which can take the same load but weighs less. One of the profiling lines needed to be modified, just like the punch unit of the profiling line. ST235 and ST252 steel is only processed for facade plating, gutters etc. The investments in the profiling lines are part of a complete modernisation of production. The welding robot, bending machines and a CNC press brake are part of the same package. With the modernisation, the Production Manager has created more efficiency, flexibility, shorter lead times and higher quality.

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

### Friction free welding wire transport to a moving welding robot

Frisomat uses Valk Welding SG2 1,2 mm  $\phi$  welding wire for all its welding work to the connecting pieces. To ensure a friction-free welding wire transport to the welding robot, which runs on a track past both workstations, the wire supply was equipped with wire dispensing components from Wire Wizard. With the use of the Wire Wizard cables and wire motor, the welding wire can be supplied over longer distances. Welding wire in drums can be placed in an easy to access place outside the cell and the heavy drums do not have to move with the welding robot.





With a doubling turnover in the past three years, greenhouse manufacturer KUBO from the Westland region in the south-west of the Netherlands faced capacity problems with the production. “Especially at the welding department, we have reached the maximum amount of manual welders,” head of purchasing department Ger Helderma explains. That is why last year, KUBO switched to robotised welding. Valk Welding delivered 2 identical cells with both 2 working stations of 7.5 m. With that, KUBO took its first steps towards robotised welding production.

## Welding robots help greenhouse builder to grow further



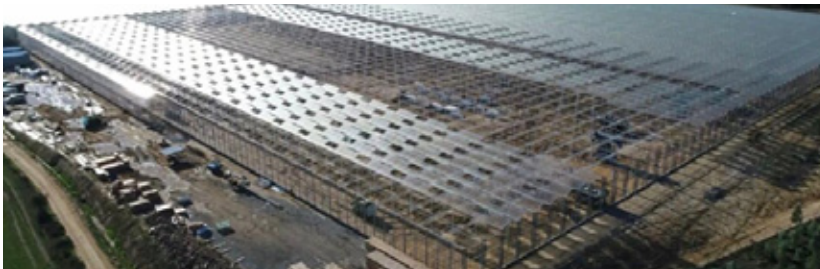
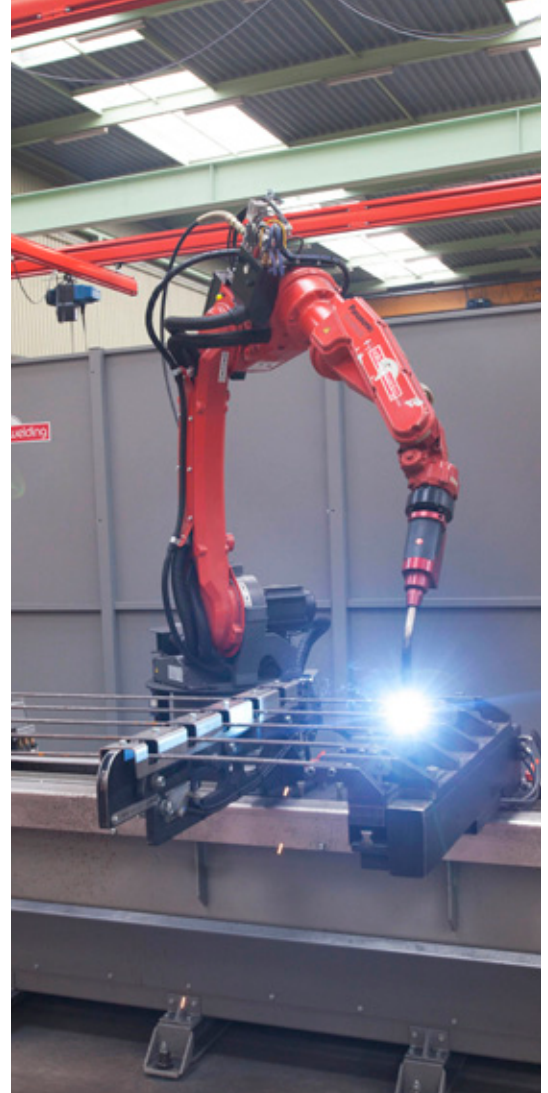
Manufacturing Greenhouses is a specialty that has grown to be a successful Dutch export product. Both builder and suppliers of installations for the Greenhouse manufacturing are mainly settled in the Westland, an area in the south west of the Netherlands. KUBO, whose turnkey projects are being sold worldwide, is one of the leading companies in this field. By delivering customer-based solutions quickly, the sales grew from 90 to 170 hectares delivered floor space in 2015-2016. To meet the growing market demand, the company reorganized in 2017, and the production with investments in tube laser, welding robot installations, and digitalization of the work preparation got quite a boost.

**Capacity shortage cannot be fixed by temporary workers**  
KUBO used to profit from a flexible shell in the production. “The problem is that the supply of certified welders is limited, even at employment agencies. That is why we reached our maximum capacity quickly when there was an increase in welding work. You can let a welding robot do repetitive work. In addition, the welding robot will do it without any problem, which means the quality and precision will in-

crease, and the assembly will not be confronted with deviations in the final product. For us, that was an impulse to invite a couple of robot integrators for an orientation. Within our internal project group, we all had the best feeling with Valk Welding. The know-how, the Panasonic robots which are specifically developed for robot welding, the offline programming DTPS comined with the adaptations of Valk Welding, in short: the whole setting was right,” Ger Helderma explains.

### Using robot requires closer tolerances

“We knew what we wanted and Valk Welding made that into a clear concept, consisting of two robotic cells placed backwards against each other. We soon discovered that the realisation of the fixtures would be a whole different story, which eventually cost more than we budgeted. In addition, welding with a robot requires closer tolerances than we were used to. We used to not care about 1 mm, which was easily fixable for a manual welder. Tubes which we used to with plasma, turned out to not be precise enough for the robot. We solved that with the investment in the tube laser.”



### “Take your time to get used to the technique”

The commissioning turns out to have quite an impact on both the employees and the logistics. Heldermaan continues: “We have been using the welding robot installation for half a year and we are still in the middle of the conversion from manual to digital. We are dealing with manual welders that now have to program a robot. That is a learning process you need to take your time for. We expect to be needing about another year to rearrange everything both logistics, production, and work preparation.”

### Higher productivity

By moving the expedition to a location somewhere else in the business park, there is more space for further expansion and a spot for the welding robots. Both welding robot installations are equipped with two working stations. With that, a large capacity expansion is realised, which can accommodate the expansion for now. “We now weld tubes and pull rods with the welding robots. The duration of one cycle is considerably shorter now that we weld them with the robots. Therefore, we can switch quicker with the planning. Another plus is that dimensional errors do not occur anymore with the welding robots. Before, a weld would be incidentally skipped and it had to be fixed

within the work itself. That does not happen anymore, according to Heldermaan.”

### Trusses next project

“Last year, we processed 9,000 tons of galvanized steel with a large part of welding on it. We are mainly talking about tubes and trusses. Also for the trusses that are still being cut and punched, the tolerances are too broad for the welding robots. “By cutting and shortening those with the tube welder as well, they can also be used by the welding robot. But we will only get there when we optimized the whole process change. With the help of Valk Welding, we take big steps towards optimization, Ger Heldermaan concludes.

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



## Robot welds complete cabin-frames at Sekura Cabins



Whereas until recently the frames of safety cabins were tacked and welded manually and welding robots were only used to weld subassemblies, whole safety cabins are now completely welded by robots at Sekura. For this purpose, Sekura Cabins A/S in Randers, Denmark started using a new welding robot installation from Valk Welding. The logistics of exchanging the cabins in the different working stations is also automated. For that, a transport system with a pallet changer is installed. With this, Sekura Cabins makes big steps both with process and quality improvement of their products.

### Sekura Cabins

Sekura Cabins is specialized in the design, development, and complete production of high-quality cabins for industrial and off-highway vehicles, commissioned by large OEMs. A total of 15 different cabins with a variety of series size are delivered within 14 days after order intake. The welding of the frames according to ISO 3834 is a quality determining part of the production.

### Welding robots on H-frame

On the three existing welding robot installations, Panasonic TA-1900 welding robots weld on an H-frame, 2D parts of the frames and subassemblies. Those are delivered to the department where the frames are composed in adhesive molds and completely welded manually, together with the other metals. After powder coating, the frames are finished at the assembly.

### Prevent size deviations

Adviser Michiel Som on behalf of Standard Investment: "After taking over Sekura's activities of the Bosal group at the beginning of 2017, we first took a closer look at the production process. It turned out, the welding was an especially sensitive process because the quality completely depended on the manual welders. This causes risks of deviations with the dimensions.

By welding the cabins completely with a welding robot, we want to exclude those risks. Especially the Touch Sensing function (wire searching) has played a significant role here."

### Cost reduction

A second important reason to weld the cabins completely with the robot is to get a prettier, and smoother welding seam on the outside. "Because you won't need to finish the seam anymore, the post-process of grinding and sanding is not needed anymore," Michiel Som explains.

### Welding robot on XYZ system

To be able to reach every position of the cabins optimally, Valk Welding chose a concept where the welding robot hangs on an XYZ system and the cabins are rotated by a 3-ton manipulator.



Valk Welding has previously delivered such a system to the Danish manufacturer Sjørring. Although, that was a 10-ton manipulator.

### Shorten process time

The cabins are tacked in a separate department, and thereafter, put on a pallet system in a transport system, and, with the help of an automated exchange table, put on the manipulator. The idea behind this construction of a transport system with two rows and an automatic pallet exchanger is being able to expand the system with two identical welding robot installations on the other side in the future. Managing Director Carsten Tonnes: "Every cabin is custom built, the series size may

not affect the process time. To shorten process times of the welding process, even more, we started programming offline with DTPS. The XYZ system is too complex to program online anyway. To learn to work with both the robot and the DTPS software quicker, we make programmes for the welding robot together with the specialists of Valk Welding DK."

### Adjust design

"Because cabins consist of pipe and tube profiles of various sizes and thicknesses, we have to deal with large welding openings. To solve that, we now work on the improvement of the set-up. A next step is to cut the profile parts with a tube laser, so you can 'click' the parts

into each other, instead of having to attach them. Furthermore, we want to use DTPS in the set-up to be able to check the accessibility in an early stage. The use of Virtual Reality could be a great help," Michiel Som concludes.  
[www.sekura.dk](http://www.sekura.dk)

[ Michiel Som: "Especially the Touch Sensing function (wire searching) has played a significant role for the dimensions." ]

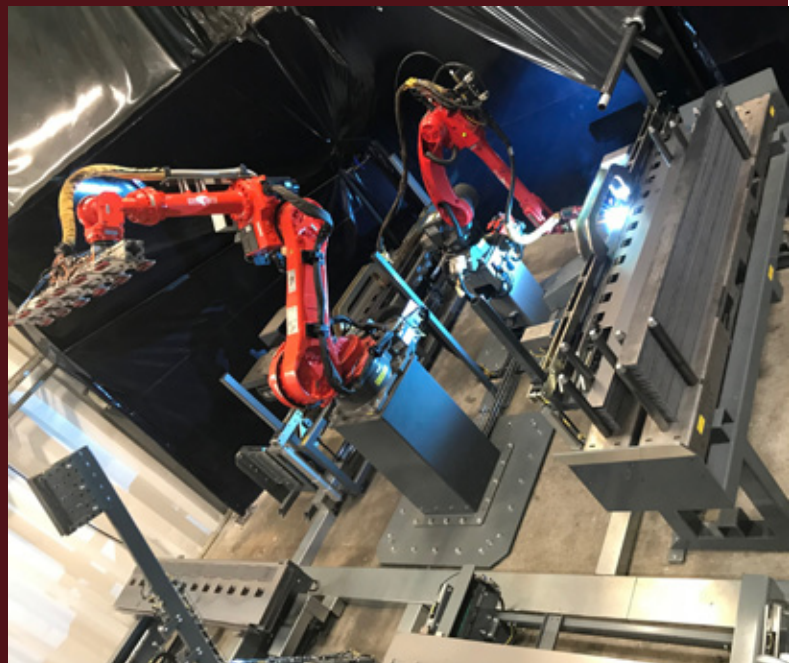


## Production cell for Ib Andresen Industri A/S

Valk Welding has delivered a handling and a welding robot for a production cell at Ib Andresen Industri in Denmark. Ib Andresen Industri delivers wear-parts to customers, among other things. Since it is a long-term order and a large amount of the same products, the supplier let them build a separate production cell for this.

The production cell at Ib Andresen Industri operates completely without people in a fully continuous process. Only the supply of materials and the disposal of finished products is done manually. The supplier even robotised the bending of the plate notches. The high degree of automatization arose from the broad portfolio of the supply of products for the transport sector, wind and solar energy, construction, and general industry. Besides that, Ib Andresen Industri has got an own steel service company, where they process steel off of coil into flat cut sheets.

[www.iai.dk](http://www.iai.dk)





CZECH  
REPUBLIC



## PEaPE METAL welds motorcycle frames for Peugeot

The supplier PEaPE METAL s.r.o., based in the South Moravian region in the Czech Republic, has established a long-term cooperation with Peugeot Motorcycles for the production of frames for motorcycles manufactured by Peugeot. Owner Rudolf Peřinka: "We strive for one hundred percent quality. The welding robot system from Valk Welding plays a crucial part in this."



### Peugeot Motorcycles

Peugeot Motorcycles, a subsidiary of the French car company, produces small motorcycles for the European market. Peugeot is the oldest brand of scooters in the world and has a unique history of technological progress in the area of production.

### Wide range of products

In addition to complete frames for Peugeot motorcycles, PEaPE METAL also manufactures components for agricultural machinery and lorries, parts for the electro-technical industry, metal furniture and brake cylinders for Tatra Karosa. Approximately 30 percent is exported to France, 15 percent to the Netherlands and the remainder is destined for the Czech market

### Use of welding robot is crucial

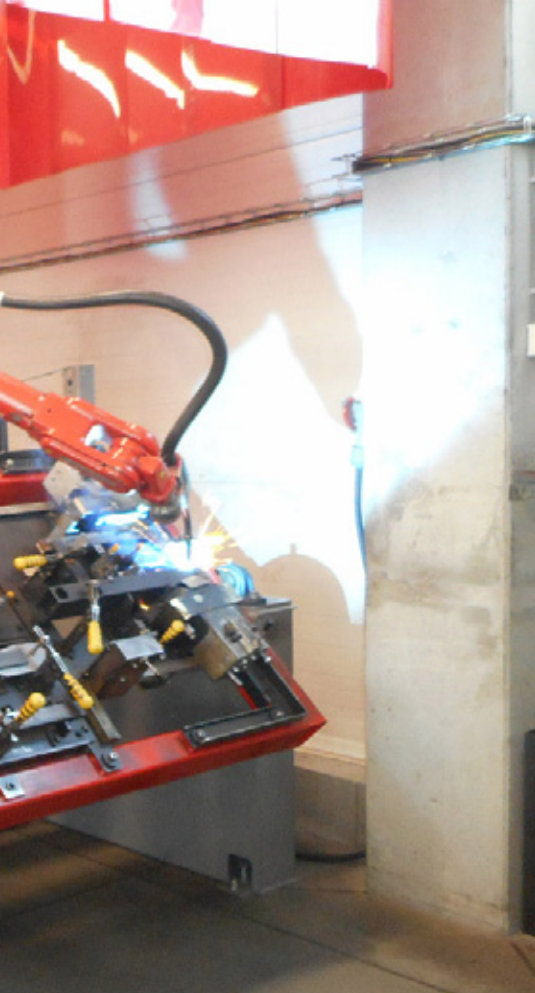
PEaPE METAL had six months in order to set up the production. In addition to new construction, it also involved new equipment, among which welding robots. "High and consistent welding quality is a safety requirement set by the manufacturer. It really has to be 100%. In order to safeguard this, the use of welding robots was crucial. In the course of our orientation round we came into contact with Valk Welding at the trade fair MSV in Brno. A visit to Valk Welding head office in the Netherlands was the deciding factor for the investment in two H-3100 welding robot cells."

### Long-term cooperation

Rudolf Peřinka: "The cooperation with Peugeot is a long-term project, which we of course want to maintain. For this reason, we strive to exceed their expectations. We developed a new variant on the basis of the 3D models of the frames, the fabrication of which proved to be more efficient, cheaper and better to produce. True, we are a small company, but we have very clever people!"

### More efficient process

Peugeot performed the welding of the frames in France with the use of Motoman robots. Rudolf Peřinka: "We set up the welding production of the frames according to our own insights. Ultimately, it turned out that using our method, we were able to achieve with two welding robots what the French were doing with seven robots. The test frames were of good or even higher quality, after which we were able to begin the production of the frames."



## Welding robots from Valk Welding

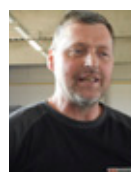
The H-3100 welding robot cells have two stations that are located opposite to each other with working tables in a size of 3x1 metres, which are both operated by a TA-1800 WG welding robot. The PanaDice positioners are capable of handling 500 kg, while the frames weigh around 300 kg. The motorcycle frames on the 3x1 metres jig supports are welded in a single pass with the Panasonic welding robot. The same end result for which Peugeot required 7 welding robots.

PEaPE METAL is certified for the welding

process in accordance with EN ISO 3834-2, which also applies to robot welding.

## Complete technology from a single supplier

In the meanwhile, PEaPE METAL produces frames for the three different scooters made by Peugeot, the three-wheeler Metropolis 400, the SATELIS 125 and the SATELIS 400. In the near future several new projects will follow, for which investments will be made in additional welding robots. "In these endeavours, Valk Welding will be the exclusive supplier of the welding robot installations. The complete technology is delivered from



[ Rudolf Peřinka: " We were able to achieve with two welding robots what the French were doing with seven robots." ]

a single supplier. The welding robot systems offer a high degree of flexibility and can be easily programmed. For us, the Valk Welding welding robot systems are simply an ideal solution," Rudolf Peřinka explains.

[www.peape-metal.cz/en/](http://www.peape-metal.cz/en/)



BELGIUM



# Cutting specialist DCoup Laser expands with robot welding

Fast delivery of high-quality laser cutting has ensured exponential growth in the short term for the Belgian supplier DCoup Laser. Besides additional operations such as bending, drilling and welding, the step to robot welding was taken last year. Meanwhile, the welding robot cell that Valk Welding supplied was used extensively for welding parts for heavier applications.

DCoup Laser in Florennes is a company of the brothers Frédéric and Cédric Demarche. In eight years, the young entrepreneurs have built up an impressive machine park, in which TRUMPF laser cutting machines, for plate and pipe and a STOPA warehouse for 2,000 tons of plate, dominate the production facility. The enormous capacity in the field of cutting also yields a lot of setting and welding work. Frédéric Demarche: "The demand for welding products has increased in recent years for some specific markets. In order to satisfy our customers, we decided to invest in robotic welding to improve the quality of components for the heavy equipment and the construction sector."

## Broad sector distribution

The customer base of DCoup Laser is very diverse, from the medical sector to aviation, extrusion, agriculture and construction. "We produce unique series of different sizes for this," Frédéric Demarche explains. DCoup Laser is extensively automated on all fronts. This way, the locations of all workpieces and materials within the company are automatically tracked. The company is also certified to EN 1090 standard. But the success of the company is mainly determined by the knowledge and experience of management in the field of process and programming. "Our goal is to communicate with the customer as quickly as possible, and to keep the delivery times as short as possible"

## Panasonic TM-1600WG3 with PanaDice 250

"Based on the reputation and after-sales services, we purchased a welding robot from Valk Welding. The cell consists of a Panasonic TM-1600WG3 welding robot and a clamping table of 2500 x 1250 mm that is rotated 360° with a PanaDice 250 manipulator. This allows us to weld different workpieces in varying batches and dimensions and the welding robot can easily reach all positions within the workpieces."

## Easily programmed

"For the programming and use of the welding robot, we have followed a training at Valk Welding in the Netherlands. After commissioning, our employees, specialized in welding, were trained for the use and maintenance of the welding robot.

We manage the programming of the welding robot easily with the well-known DTPS offline programming package from the office or directly on the robot by the operator himself."

"Our experiences with Valk Welding are very positive. Valk Welding is very professional in robotic welding for us and responds quickly to our requests and special requirements or repairs," Frédéric Demarche concludes.

[www.dcouplaser.be](http://www.dcouplaser.be)



(from l to r): Mr D. Kemp, Mr R.H. Valk, Mr Abe, Mr Hamamoto, Mr Saito, Mr J. Hendrickx, Mr P. Pittomvils and Mr Ceulemans



BELGIUM



## 20th anniversary "Strong Connection" partnership with Van Hool

**VANHOOL**



The strong connection

Last summer, Valk Welding and Van Hool celebrated their 20th anniversary of "Strong Connection" partnership. Van Hool is one of the leading manufacturers of industrial vehicles, buses and coaches in Europe. Especially for this occasion, the Japanese management of Panasonic came to thank Van Hool for this strong partnership.

With the investment in the first Valk Welding welding robot already in 1998, both companies laid a fundament for a long collaboration in the field of welding robotising. In the past 20 years, Valk Welding has delivered 24 systems with Panasonic welding robots, of which more than half of them are at the department of industrial vehicles. Peter Pittomvils, branch manager Belgium: "The generations we have delivered the past 20 years, show the evolution in both technology and innovation."



### Early adopters

Van Hool also belongs to the "early adopters" in the field of offline programming. Daniël Kemp, Manufacturing Manager Commercial Vehicles: "With that off-line programming, we could efficiently weld small series. Even though that in the beginning the operator spent more time on off-line programming than teaching. But now that is the other way around, due to the evolution of the offline programming software DTPS. Offline programming turned out to be one of the most important items in the automation process." Van Hool has also been using APG (Automatic Path Generator) himself as one of the firsts. APG is a toolkit with open source software, developed by Valk Welding, with which customers can create their own specific

robot software. APG automatically generates complete programs for the welding robot, based on data from CAD and Excel. "With that, we were able to shorten the programming time," Daniël Kemp explains.

### Customization and large variation

Daniël Kemp: "An important distinctiveness of the industrial vehicles of Van Hool is that all trailers and tankers are custom build, while others mainly manufacture standard products. Only by automation, you would still be able to produce competitively in Western Europe. By investing deeply in automation technology, we are able to produce high-quality products, customizable, and with a large variation. That is why we keep investing in production technology, new products, and new markets. Just like we aimed for in 1998. In that area, I see a lot of similarities with Valk Welding. At the same time, we went on new markets, both firms went through a big technological evolution, and both organisations have grown strongly on both sides. That is how we expand our future together, and both for themselves."

### Stainless steel tanks for BASF

'Top of the bill' are the 3 large welding robot systems for the welding of complete stainless steel tanks in a very high quality, and a unique flexibility thanks to 100% offline program-

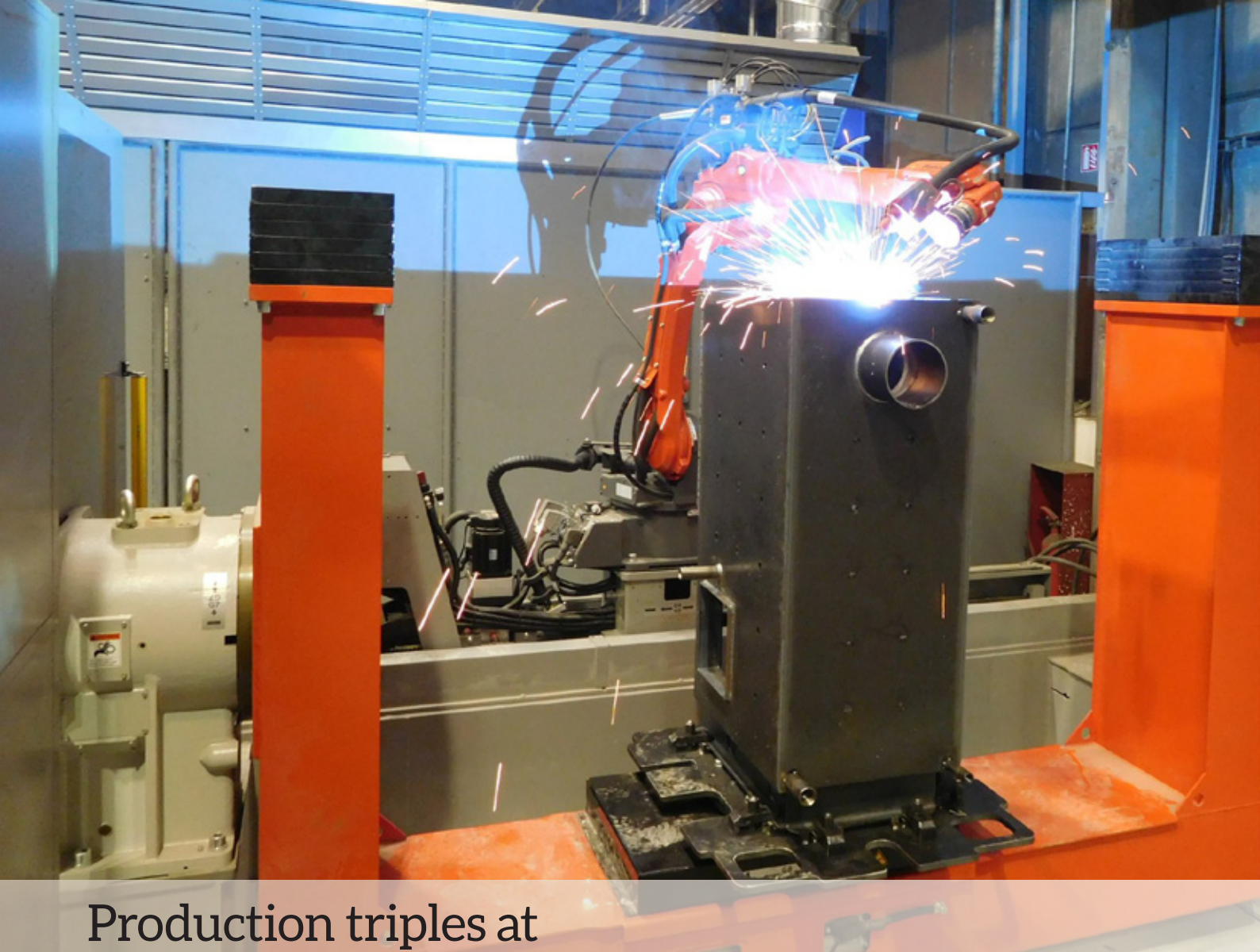
ming, automatic programming, laser welding seam tracking, and marking with inkjet technology.

Jos Hendrickx, head of department tank construction IV: "For us, this was one of the first large orders, at which we had to weld steel parts on stainless steel tanks. That causes specific problems when you want to keep a continuous process with the welding robot. Valk Welding solved that for us by providing the robot with an automatic wire exchange system. Besides that, it is important to master



the production tolerances with such a large volume of the 13 m long tanks with a cross-section of 2.4 m. An Arc-Eye laser sensor from Valk Welding, which scans the weld seam during welding, ensures that the welding robot exactly follows the weld seam and thus guarantees consistent quality. With the order for 600 units we have been working for more than a year, where we have delivered the first 200 units in the meantime. "

[www.vanhool.be](http://www.vanhool.be)



## Production triples at Benekov boilers

As one of the larger European manufacturers of boilers, the Czech company Benekov s.r.o. had to deal with a shortage of skilled manual welders, while the demand for their boilers increased significantly. This was a reason for the company to work on robot automation. Valk Welding supplied a turn-key welding robot installation, equipped with 2 stations each equipped with a two-axis drop-center positioner. Benekov now welds three-quarters of all types in a fraction of the time and at a lower cost. This year the company expects to produce between 3.5 and 4 thousand boilers.



Benekov develops, produces and sells heating boilers that work on solid fuels, such as wood pellets and coal. The company invests heavily in the development of modern automatic boilers and is one of the pioneers in Europe with its biomass boilers. A subvention scheme created an explosive increase in the demand for new Ecodesign boilers in middle European countries. Owner Leopold Benda: "Already in 2012 we considered the use of robots for welding production. However, the right impulse was lacking. We had

sufficient manual welders and the investment was also a 'thing'. Until in the period 2015-2016, production quadrupled and we ran into a shortage of manual welders."

### Turn-key concept from Valk Welding appealed

Ever since Benekov started to study the possibilities of welding robotisation in their firm, contacts with Valk Welding CZ took place. Daughter and marketing director Klára Seitlová: "We have expanded

our focus on the market, all the more because it was a major investment. But we wanted the best for our company. The turn-key concept of Valk Welding was the best solution. They not only build the complete cell, but they could also make the welding program for the product that we were going to weld on the robot. They also provide the necessary support in the start-up phase. We saw that as an important plus point. A visit to the Valk Welding headquarters in the Netherlands confirmed our image of a professional



CZECH  
REPUBLIC



[www.youtube.com/valkwelding](http://www.youtube.com/valkwelding):  
Welding of sections of boilers for coals



now welding about 10 different parts on the welding robot. A competent employee has learned relatively quickly to program the workpieces for the welding robot. The operator previously worked as a welder."

### Extra production capacity

Owner Leopold Benda: "The welding robot is now used in a 2-shift service for about 20 hours a day. This enabled us to create an extra production output, which would otherwise require 6 manual welders. In other words, 2 welders produce the same volume with the welding robot as 6 professional manual welders and deliver a consistently high welding quality."



and stable organization and a far-reaching specialization in welding robotisation."

### Welding robot on E-frame and 2 stations

At the end of 2015, the first welding robot system was delivered, consisting of a 6-axis Panasonic TL 2000WG3 welding robot on an E-shaped frame construction. The welding robot moves over a track to work on two workstations with 2 axis positioners. Based on the complex shapes of the inner and outer shell of the boiler housing, a drop center positioner

was chosen. This allows the workpieces to be rotated in all positions so that the welding robot can optimally reach all positions to be welded. With the choice of 2 stations, the welding robot can continue to produce directly at one station, while the new workpiece is changed into the other station.

### Programming

Valk Welding supplied the welding program for the production of one component, for which the welding robot was deployed for the first 10 months. Kamil Kubeša, CTO: "We are

### Only the best manual welders on the robot

Klára Seitlová: "Four employees now work with the welding robot. We only let the best-trained manual welders work with the robot. Welding knowledge is a requirement for proper programming of a welding robot. A professional knows exactly in which position the robot torch needs to be programmed and in which order the best heat distribution in the workpiece is programmed."

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



# Welding aluminium scaffolding with Active Wire Aluminium

Valk Welding delivered two welding robot systems to Jumbo Stillads A.S., the Danish market leader in aluminium scaffolding. The project is one of the first systems where Valk Welding used the Panasonic Active Wire system for aluminium. Active Wire uses a special robot torch with an integrated wire feeding system.



## Active Wire Aluminium

The Active Wire applications that had been used to date by Valk Welding had been for workpieces in thin-sectional steel and stainless steel. Aluminium requires different software and welding with MIG, where the protective gas does not contain any active gas. Ad Kruithof, senior application engineer of Valk Welding with over 30 years of programming experience, said "The difference in the application for aluminium is that this material has a lower melting point than steel or stainless steel. At the start the heat sinks quicker into the material, and you need to take that into account. At Jumbo Stillads we used 1,2 mm Ø aluminium welding wire following extensive testing in the pilot set-up in Alblasserdam.

## User-friendly interface

Both welding robot systems weld the same products in a fully continuous 2-shift system, where the products differ in width or length. To guarantee that operators can change quickly between the different types, Valk Welding developed a user-friendly interface (HMI) on the basis of CMRS. Employees can use the touch panel to enter the required model and the choice of searching by gasnozzle or wire.

## No programming knowledge required

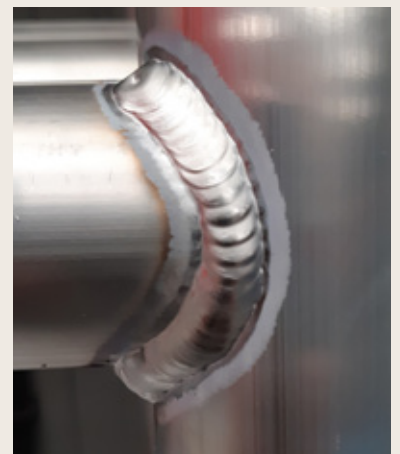
The user-friendly interface makes it possible to weld changing product dimensions with the robots without needing programming knowledge. Marcel Dingemans, Branch Manager of Valk Welding DK explained "Employees don't have to programme anything, but the downside is that they do not become familiar with the teach pendant. In case of a fault it is useful that an employee knows how to move the robot. So we

put together a short training programme for Jumbo."

## Compact footprint important criterion

In view of the limited space at Jumbo Stillads, the cells needed to be compact. One cell has 1 workstation and is closed with a high-speed door for minimum footprint. The second cell is based on one H-frame set-up with 2 workstations. Both cells use a Panasonic TM-1800WG3 welding robot in a fixed position and the workpieces are positioned by a PanaDice 250-IV manipulator.

[www.jumbo.as](http://www.jumbo.as)



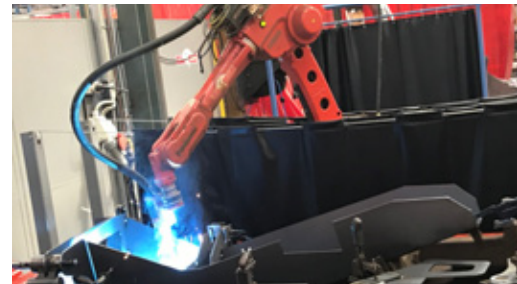




# Duty cycle of welding robots increased with intelligent planning



Many welding robot systems have two stations to ensure that the welding robot continues welding on one station during changing workpieces on the other station. Theoretically that puts the duty cycle of a welding robot close to 100%. In practice, some welding robot systems stand still large amounts of time, because there is an unbalance in the cycle times per station, which means the automation benefits are only used to some extent. Which measures help to increase the duty cycle? A practical example.



## Active Wire process

Active Wire is a process developed by Panasonic, where the weld is made with a low heat input, to ensure that thin-walled materials can be welded quicker and without projections/weld spatter. The digitally controlled welding process works with active wire feed control, where the integrated wire motor ensures the welding wire makes oscillating movements at a high frequency. This produces a stable drop transfer and a low heat input. The principle of the process is the same for steel, stainless steel and aluminium.

The Danish branch of the global Kverneland group had a 50% duty cycle for its welding robot systems, and management decided time had come to study how that percentage could be increased. Six of the seven Valk Welding welding robot systems have two stations on an H-frame construction. As there is no longer any production for stock but only 'built to order', the distribution of the workpieces over the welding robots is determined by the available moulds. In practice this means that the cycle times of the various workpieces often vary enormously and that the additional time required for changing fixtures and workpieces was very high.



## More intelligent combinations

The solution was found in reducing the number of changes the fixtures and in better combinations of workpieces with similar cycle times per cell, which cut the waiting time. For production management this was quite a puzzle, but ultimately it produced a much higher duty cycle of the welding robots.

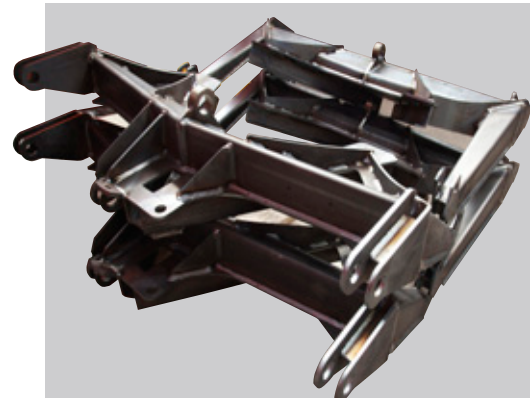
## Strong investments in logistics

The conversion to 'built to order' has increased the number of product changes per day. To improve the production flow, the company invested in improving the logistics. All the parts that need to be put together are now sent to the welding department Just in Time.

## About Kverneland

Kverneland is a manufacturer of agricultural machinery with systems for tillage, sowing, fertilisation and spraying. Kverneland has production sites in 25 countries around the world.

[www.dk.kvernelandgroup.com](http://www.dk.kvernelandgroup.com)





POLAND



# METAL-FACH



**Metal-Fach Sp, one of the leading manufacturers of agricultural machinery in Poland, has entered into a long-term partnership with Valk Welding for a large-scale renewal and expansion of the welding robot capacity. The high welding quality, offline programming and the system for weld seam searching, were decisive arguments for the choice of Valk Welding as their supplier. The project includes the delivery of six welding robot installations in a period of 10 months.**

## Metal-Fach chooses the technology and know-how of Valk Welding

Metal-Fach already had experience in robotic welding. But they faced with limitations due to the lack of a well-functioning tracking system, especially in welding workpieces with large tolerances. Mr. Mr. Michaluk, Process Engineer: "The programs had to be adjusted manually, which takes a lot of time and did not provide a consistent welding quality. We want to deliver products of the highest quality, so we need only proven solutions to meet our requirements. The use of welding robots plays a crucial role for quality and efficiency." For this reason, Metal-Fach has started an intensive search for a reliable partner in this field.

### Complex phase of tests

Valk Welding has performed a serie of welding demonstrations at the technical center in Mosnov CZ ,for the products provided by Metal-Fach. Numerous reference visits were also made to Valk Welding customers. Also of the offline programming process of a trailer frame element in the offline DTSP software was presented.

After the reference visits and welding tests, Metal-Fach decided to chose the technology and "knowhow" of Valk Welding. It tookes two years, from the first meeting with Metal-Fach staff, until the first order was signed. This time was needed to build the right relationship at mutual trust between companies. It also enabled Metal-Fach to prepare more pro-

gramming friendly constructions for robotic welding.

### Simplification of the programming

Simplification of the programming and the possibility of welding large frames in high quality were at the top of the wishlist of the machine manufacturer. Valk Welding, as a European robot integrator, with a far-reaching specialization in welding robotisation, offers with DTSP software an excellent solutions for virtual offline programming. With more than 750 licenses in Europe, DTSP is one of the most widely used offline programming systems in Europe for offline programming. DTSP was developed in close coöperation between Panasonic and Valk Welding to flexibly facilitate and automate welding production.

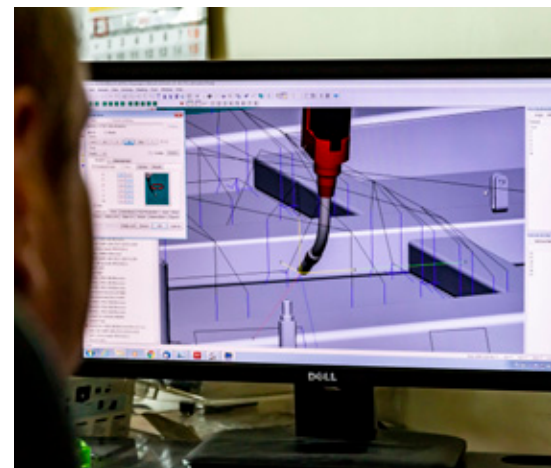
### Seam tracking

In order to achieve a high production quality when welding large frames, it is important that the welding robot first check the deviations in the workpiece and, if necessary, corrects the position of the weldseam in the welding program. Valk Welding uses the Quick Touch search system. In that case, the welding robot first measures, by touching the welding wire where after the position of the welded element and compares the found positions with the programmed positions. All deviations are automatically corrected by the software in whole or in part of the program, thanks to

which the welding robot accurately finds the location of the weldseam, so that a high welding quality can be guaranteed.

### First system

Metal-Fach decided to purchase the first robotic welding system for welding 2200 x 4200 mm sized tractor trailer frames. Thanks to this system, Metal-Fach company has achieved a double increase of efficiency". This system proved to be a great success and Metal-Fach decided to extend it with one more welding robot that will allow to fully use the capabilities of the system and provide the welding process in two working stations independently





### Another five welding robot installations

This year Valk Welding installed another five installations, for robotised welding of smaller constructions, semi-finished products, sub-assemblies, large spatial structures and for large production volume of boilers for heating installations.

The systems for the boilers is equipped with a two-axis DropCenter manipulator. "Thanks to the DropCenter manipulator, we are able to set the workpieces to the most convenient position for welding."

### Offline programming

Mr. Rymaszewski, Production Manager: "We

use the off-line programming DTPS now very much. This 3D software has greatly simplified the work of the programmers. DTPS is also used to modify programs that were made online with the Teach Pendant.

### Not without our "super crew"

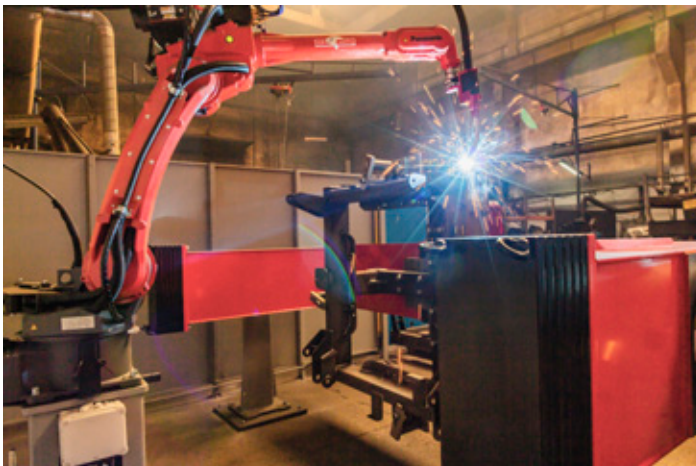
Mr. Rymaszewski: "The change of welding robot technology is not only a way of investing in hardware and software and changes in logistics or construction. A very important element in this puzzle is to create the right team of people whose knowledge, mutual understanding and, above all, determination are the basis of success. Without the creation of this "super crew", such a rapid implementa-

tion of robotic welding and serial production would not be possible."

It should also be noted that the size of Metal-Fach's investment in robotic systems was very high, however, it is projected that this investment will pay back within 3.5 to 5 years. It should not be forgotten that thanks to the robotic automation, the working conditions of the crew have significantly improved, as well as a very large technological leap not only in the field of welding, but also in other stages of production."

[www.metalfach.com.pl](http://www.metalfach.com.pl)

*Metal-Fach's super crew*





JAPAN



## Panasonic congratulates Valk Welding with 30 years collaboration

We are very happy to have 30 years celebration together with Valk Welding.

I started supporting European market in 2005 and I have more than 10 years with you.

As I remembered, I learned a lot of thinking way of management from you.

My current management way was influenced from you.

I have a lot of experience with you till now.

One of the most impressed activity is your "Usersclub".

It was well organized professionally and I was surprised that one of customer explained his experience to use our equipment to others.

They are proud of corporation with Valk Welding and they are willing to disclose their production improvement way.

I understood that your customers fully trust you and you have very strong relationship with customers.

I'm sure that you will grow next 20 years for 50 years anniversary with strong relationship with customers and innovative technology.

Best regards,  
Ken Dobashi

Congratulations and thank you very much for 30 years business relationship between Valk Welding and Panasonic.



Along with remarkable growth of Valk Welding in last 30 years, Panasonic robot sales has been also increased. We really appreciate it.

Equipment industry is normally very much affected by economic fluctuation, but Valk Welding has been made a grows steadily.

It was from 2006 to 2013 I had been working with Valk Welding.

In that period, we had faced the Lehman shock financial crisis and too much strong yen.

Most of management people of the company suffered by difficulty and become very passive

but Mr.Remco Valk dealt with many things positively.

I remember well about robot exchange program which try to proceed to replace old robot with new robot.

With excellent leadership of CEO Mr.Remco Valk, President Mr.Adriaan and all of Valk Welding employees worked hard altogether and overcome these difficulties.

I think aggressive action like this is one of the factor of Valk Welding making growth steadily.

I have already retired but I still remember the days I worked with Valk Welding and I am grateful to Valk Welding.

Valk Welding has been asking strong request with Panasonic and it has been helping our robot business growth. We sincerely appreciate it.

30th anniversary is just one passing point. I hope to celebrate 50 years and 100 years anniversary for the future by giving us continuous request from Valk Welding from now on.

Sincerely,  
Koichiro Masai  
Your friend

## Tradeshows

### Expowelding 2018

Sownowiec, Poland  
16-18 october 2018

### NIL Verbindingsweek

Gorinchem, Netherlands  
30 october - 1 november 2018

### Sepem Industries

Douai, France  
29-31 january 2019

### Machineering 2019

Brussel, Belgium  
27-29 march 2019

### Brabantse Metaaldagen

's Hertogenbosch, Netherlands  
10-12 april 2019

## Colophon

Valk Welding NL  
Staalindustrieweg 15  
Postbox 60  
NL-2950 AB Alblasserdam

Tel. +31 (0)78 69 170 11  
Fax +31 (0)78 69 195 15

Valk Welding BE  
Tel. +32 (0)3 685 14 77  
Fax +32 (0)3 685 12 33

Valk Welding FR  
Tél. +33 (0)3 44 09 08 52  
Fax +33 (0)3 44 76 23 12

info@valkwelding.com  
www.valkwelding.com

Valk Welding DK  
Tel. +45 64 42 12 01  
Fax +45 64 42 12 02

Valk Welding CZ  
Tel. +420 556 73 0954

Valk Welding DE  
Tel. +49 172 272 58 21  
Fax +31 (0)78 69 195 15

Valk Welding PL  
Tel. +48 696 100 686

Valk Welding SE  
Tel. +45 64 42 12 01



'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

Production:  
Steenkist Communicatie  
and Valk Welding

The strong connection