



Signing contract Panasonic and Valk Welding.
Takahashi (r) en Remco H. Valk at 12-09-1989

30 Years of collaboration with Panasonic brings welding robot technology at a higher level



NETHERLANDS

Also in this issue:

- Vermeiren, customer of the first hour 3
- VWCO presents TM-cobots at TechniShow .. 4-5
- Welding robot welds chair frames 6
- TM & TL series arc-welding robots 7
- Specialist in wheel production makes a step
towards welding robotisation 8
- Small firm survives with weldingrobot..... 9
- Clemens Technologies welds perfectly without
tracking of the welding seams 10-11
- Increase of quality and productivity
at ROBIN..... 12-13
- Latest technology with Valk Welding turnkey
welding robotsystems 13
- Longitudinal welder plays crucial role in
production process clad plates 14-15
- Henjo welds complex workpieces with the
use of two drop centers 16
- Tradeshows 16

30 Years ago, Valk Welding introduced welding robots of the Japanese manufacturer Panasonic onto the Benelux market. Since then, both companies have worked closely together in the development of innovations in the field of welding robotisation. While Panasonic developed its welding robot system into the current generation of TAWERS welding robot systems with an integrated power source, Valk Welding ensured flexible usage and the application of sensor technology and different software applications. This has resulted in a technology that enables hundreds of companies to focus their daily welding production in a very efficient manner.

Before cooperating with Panasonic, Valk Welding had ten years of experience with the sale of Cloos and IGM welding robots. Remco H. Valk: "The European robot manufacturers then only built 200 robots per year, whilst the production numbers at the Japanese robot manufacturers were more than 500 per month. Therefore, the operational reliability was higher than what was being built in Europe at that time. Moreover, the Japanese robots were much cheaper. For us, these were good arguments to add Japanese welding robots to our delivery program."



continued on page 2 ➔



The strong connection



Pioneers in the field of welding robots

With the sales of the first generation welding robots on the Dutch market in the seventies and eighties, Valk Welding is one of the pioneers in this field. With this, Valk Welding has been able to further expand its knowledge and experience in this field and was thus able to get a head start on other suppliers. With the introduction of Panasonic's welding robots on the Benelux market, the big breakthrough followed. In 1990, Valk Welding sold 90 Panasonic AW660 welding robots in one year and created the base for long-term cooperation with many customers. That is why Valk Welding became one of the largest customers of Panasonic Welding Systems in Europe, which also led to close cooperation in the development of the hardware and the offline programming software DTPS.

With the sale of 3000 Panasonic welding robots in the past 30 years, the collaboration between Panasonic and Valk Welding has reached a new milestone.

Low-volume, high-variety

Valk Welding brought the Panasonic welding robots to Western Europe at a time when the industry was going through a trend change from large series production to low-volume, high-variety. It was Valk Welding's task to make the use of welding robots suitable for this change. The introduction of offline programming with DTPS (Desk Top Programming System) played a crucial role in this, in which both companies have worked closely together over the past 22 years to develop DTPS into the current generation. DTPS, with over 700 users, is now one of the most used offline programming systems for welding robots in Europe.

Complementary

Especially the complementary ability of Valk Welding has been co-determining in the cooperation of the past 30 years for what is already possible in the field of welding robot technology. "While Panasonic builds a standard product in large numbers, Valk Welding ensures flexible application and integration in turn-key welding robot systems, with the addition of hardware and software components developed by us." Remco H. Valk explains the additional products from Valk Welding:

- Valk Welding robot torches with pneumatic shock sensor and wire clamping device
- The Quick Touch weld seam search system
- Program Protection System, which makes it possible to calibrate the robot immediately

after a crash or relocation

- Quality Management System
- Custom Made Robot Software
- APG (Automatic Programming Generator)
- Arc-Eye lasercamera seam tracking system
- MIS (Management Information System).

Partially thanks to the innovations mentioned above, Valk Welding took the robotic welding process to a higher level, whereby both quality, efficiency and flexibility could be optimized. Even single-piece production welding with the robot is no longer an exception.



Vermeiren, customer of the first hour

The Belgian manufacturer of wheelchairs and home care products Vermeiren was one of the very first companies to buy a Panasonic AW7000 welding robot during the introduction of the Panasonic welding robots at Techni-Show 1988. Since then, Vermeiren has acquired 6 Panasonic welding robots from Valk Welding for the production at that time in Belgium, some of from which some of them later moved with the production relocation to Poland, where more than 20 units were delivered subsequently. "The attractive price and the support Valk Welding was able to provide were good reasons for us to choose for Panasonic", head R & D Patrick Jespers says, who at the time experienced the commissioning of the first welding robot in 1988.



Due to increasing competition from low-wage countries, Vermeiren was forced to critically review the production costs. Although the bending and welding of the frames are only a small part of the production process, robotisation of the welding production has already resulted in considerable savings. Six years later, the wheelchair manufacturer decided to move the entire production to Poland because of the much lower wage costs. "Upholstery, wheel production, and assembly remain labour-intensive activities that offer few possibilities for automation", Patrick Jespers explains.

Decisive price

"It was indeed the first welding robot that we bought. Which means, working with robots was completely new to us at the time. The choice for Panasonic instead of a German manufacturer was mainly made on the basis of price. Our people could also attend training at Valk Welding Belgium facility in Schoten, which is close to our factory", Patrick Jespers explains. At that time, the robots had two pneumatically operated indexing tables and H frames were not yet available. Therefore, the positioning of robots and tables had to be done as accurately as possible, to ensure the existing programs could be kept

exchangeable between robotsystems as much as possible.

Creation of Reha-Pol-A

At the start of our Polish establishment in mid-1994, a number of welding robots moved from the factory in Kalmthout in Belgium. The installation in Poland was done by people from Valk Welding. Wim Rombeek, who at the time worked as an advisor at Valk Welding: "Valk Welding helped to dismantle the robot systems in Belgium and to make it as easy as possible to restart them in Poland. At that time, Valk Welding mechanics regularly drove around 1000 km to Poland with our people to do the necessary follow-up work. Gradually, this was taken over by people locally from both Vermeiren and the Valk Welding technicians from the Czech Republic."

Poland's largest production facility

Poland is now the largest European production site of Vermeiren. Patrick Jespers: "In Belgium, we only do conversion and adjustments of wheel-

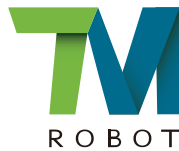
chairs and aids. The use of welding robots at Reha-Pol-A is not so much motivated by wage costs, as is an important issue in Western Europe, but purely from an efficiency point of view. "More than 20 welding robot cells provide a constantly high output in a 3-shift operation and that cannot be beaten with manual welding. In addition, the constant, high quality of welding plays an important role in it Continuous innovation From the start in 1994, Valk Welding supplied 23 welding robots, replacing technically outdated welding robots with new ones. "Older types continued to produce until they eventually had too many technical problems to keep them in service".

The fact that a robot has been depreciated over the course of several years is no reason to replace it with a new one," Patrick Jespers concludes. The oldest, still working Panasonic welding robot at Reha-Pol-A is from 1996.

www.vermeiren.be

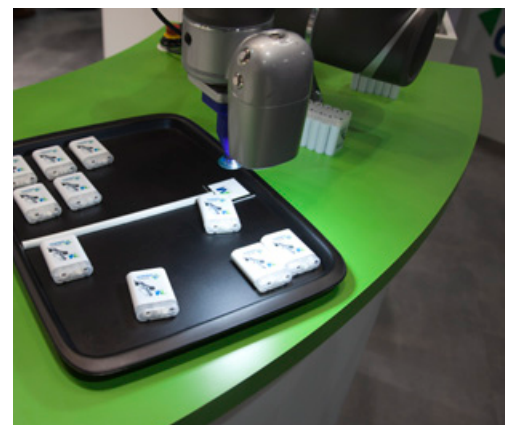


TM-cobots:
'World's first
cobots with
standard
integrated vision



TM-cobots by
Techman Robot:
the power of
integrated vision

VWCO presents TM-cobots at TechniShow



Collaborative robots

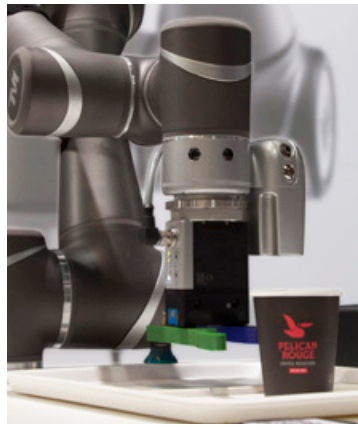
Collaborative robots, cobots for short, are cheaper than industrial robots, plug & produce ready, and are user-friendly programmable. That is why cobots are increasingly integrated into assembly lines, for mechanical loading, assembly and other applications. Cobots meet the newest safety requirements for collaborative robots and are therefore suitable to use in a production environment with and around employees, without the need for any additional safety measures.

With the presentation of eight TM-cobots with each a specific use, VWCO, part of the Valk Welding group, introduced the TM-cobots at the TechniShow. During this trade show for the manufacturing industry in the Benelux, where multiple suppliers presented the use of cobots, the TM-cobots of Techman Robots with standard integrated vision, formed an exception. Thanks to this integrated Smart function, TM-cobots are able to recognize patterns, localize objects, detect colors, read barcodes, etc.



distributed by Valk Welding

vision with cobots



The power of integrated vision

Techman Robots developed the TM-cobots as one complete system. Which has resulted a system, in which vision is integrated 100% in the hardware and software. That offers users a universal usable system with a large self-resolving ability, together with all functions you can expect of vision. To demonstrate the power and possibilities of this, VWCO showed a couple of applications in which a TM-cobot placed dominoes in the right spots by itself, sorted colored pawns, stacked small boxes, made coffee, and printed a logo. To prove that the TM-cobot knew where to find randomly supplied parts, visitors could move the parts in any direction themselves. After that, the TM-cobots were still able to effortlessly find the new positions. Anton Ackermans of VWCO: "Thanks to the integrated vision,

Compliance

TM-cobots can be equipped with special cobot grippers. The difference with grippers for industrial robots is that the power and impact of the cobot grippers are adjustable, and are not allowed to have sharp corners. Power and impact are adjustable with TM-Flow software, whereas the power of the grippers per axis direction is adjustable from 3 to 15 kg. The advantage is that the pressure by which the cobot grippers pick up a product is adjustable. Anton Ackermans of VWCO: "Newest development in here is the Co-Act gripper by Zimmer, a freely programmable gripper which works on the basis of IO links. The Co-Act gripper is full of actuators and sensors, which makes it suitable for pick and place applications with a large variety of product widths."



the TM-cobot is always able to determine the right exact position. And the gripper will always pick up a product in the centre or as programmed. Therefore, these products do not need to be placed in pre-programmed positions. TM-cobots first scan the location and then determine their exact position. That provides an enormous programming convenience, and saves a significant amount of programming time."

Simplicity of programming

TM-cobots can be easily programmed. The cobot arms can be manually guided to every position and taught as well as set per point. (hand guided programming). From notebooks and tablets, programmes can easily be optimized, and movements can be refined by speed and time. Because of this, TM-cobots are, even without experience in programming robots, easy and quick to use. The basic tasks can be learned within one day.

www.vwco.nl

Smart Built-in vision

The standard built-in vision system is both optimal hardware and software integrated. With this Smart function, TM-cobots are able to recognize patterns, localize objects, detect colors, read barcodes, etc.

Safe Safe & Low-stress Robotics

In contrast to the industrial robots, TM-cobots automatically and safely stop when it is being loaded above the set value.

Simple Intuitive hand- guide teaching

A reason why TM-cobots are easier in use than other robots is the intuitive teach function. The cobot arms can be manually moved to every position and set per point.

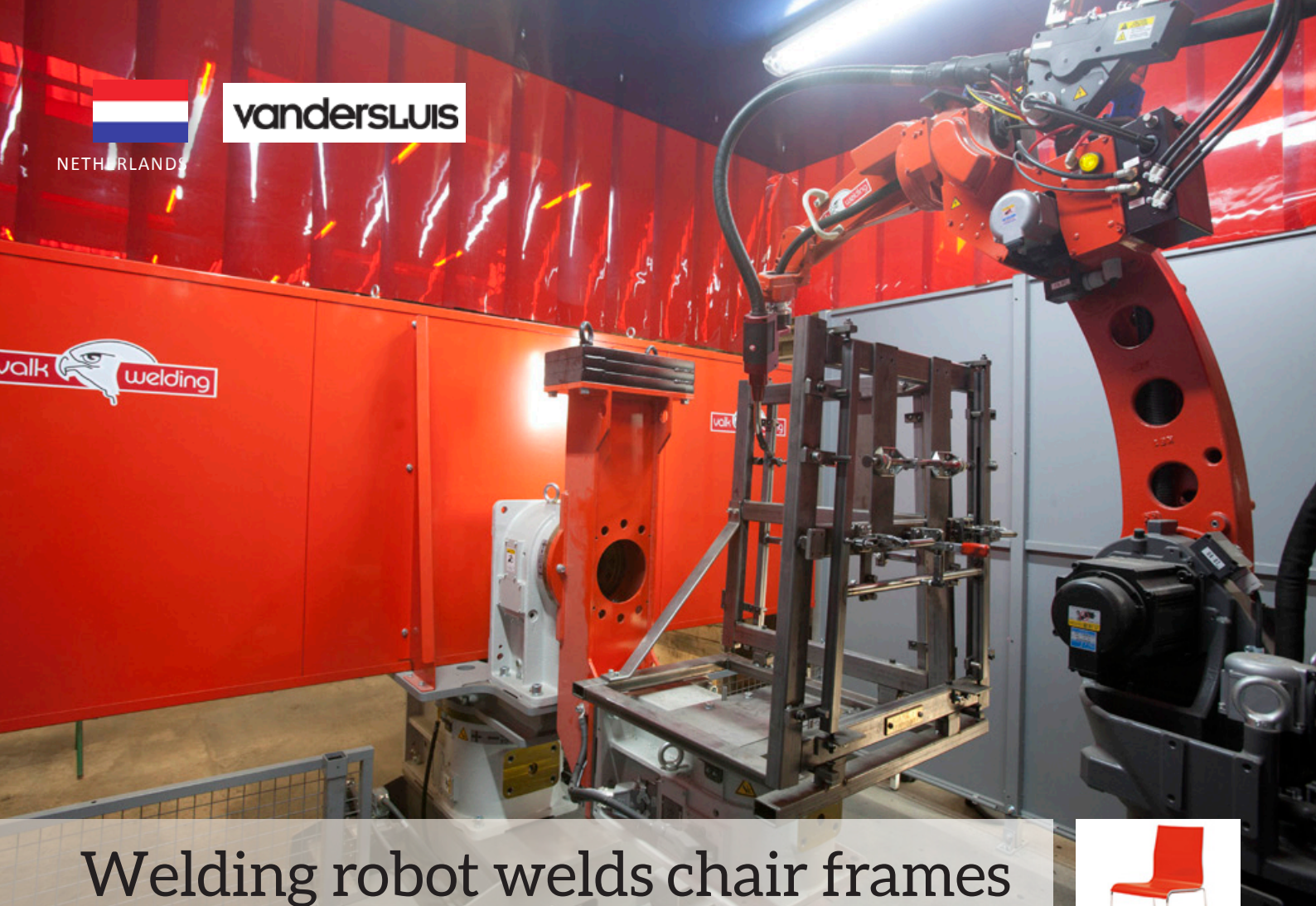
Programming without code

With the revolutionary, easy to use user interface, virtually any automation task can be created online on notebooks and tablets. For this, a teach pendant is not necessary. TM-cobots are easy and quick to use, even without experience in programming robots. The basic tasks can be learned within one day.



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vision with cobots



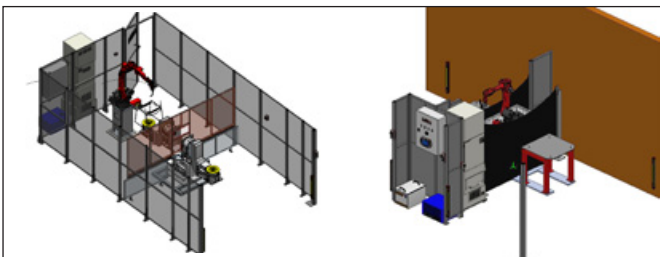
Welding robot welds chair frames

Van der Sluis uses welding robot systems from Valk Welding



In the market for project design, VDS Van der Sluis has been a common name for over 70 years. The company develops and produces steel residential and project furniture for well-known brands supplemented with work for third parties. Within the production process, tube processing such as sawing, bending, drilling, welding and powder coating are the most obvious production steps where automation can save on

labour costs. Director/owner Niek van der Sluis: "The shortening of the manufacturing time is determined by the welding robot instead of the employee. But in addition to the cost, it is also the high consistent quality that we can guarantee thanks to the welding robots." In the past year, the furniture manufacturer took a fourth cell into use, which will weld 50,000 chair frames a year for a rapidly growing furniture project.



Whereas in the past VDS Van der Sluis also sold under its own brand in addition to the production of school and office furniture, the manufacturer now focuses entirely on production. Its own brand is now sold by partner Casala, for which Van der Sluis already produces all its chairs and tables. "We are strong in producing tubes and wires, for which we do all the operations ourselves. A constantly high quality is our central focus, from development to production and delivery. We have a delivery reliability of more than 98.5%. Thanks to this quality we also produce for residential labels and third parties. As long as it concerns tubes and wires. We even produce frames for a customer from Hungary," Niek van der Sluis explains.



Years of experience with welding robots

Van der Sluis has years of experience and technical expertise in the field of bending, welding and finishing tube and wire material. All frames for chairs, tables, bar stools and benches are welded and coated by the company itself and completely finished. Niek van der Sluis: "We have worked with welding robots in an early stage. At the first replacement round in 2011, we switched from a different brand to Valk Welding, after which several welding robots followed. All cells have a welding robot with a workstation on two sides, where employees unload and loads while the robot weld frames on the other station."



Indexing table shortened the walking distance

The fourth installation concerns a Panasonic TA-1400WG3 welding robot on a pedestal and two workstations on an indexing table. Alex Hol, technical advisor at Valk Welding: "To improve the workflow for the operator, the workstation is continuously operating in the fourth cell where the robot welds on one side of the indexing table. In this way the walking distance for the operators could be minimized. In addition, L-positioners were chosen to manipulate the products for optimal accessibility."

Trial with Active Wire

One of the frame types of 2 mm thick-walled tube of $\varnothing 40$ mm is now manually welded with the TIG process. Niek van der Sluis: "We do this to limit rework as much as possible. However, this costs quite a lot of time (money). That is why we have started a test with Valk Welding and by using MIG combined with the Active Wire process. "Active Wire is a combination of SP-MAG and wire feed control, in which the welding wire is moved back and forward at a high frequency. Active Wire makes it possible to weld thin-walled materials faster and without spatter, so rework is minimal."

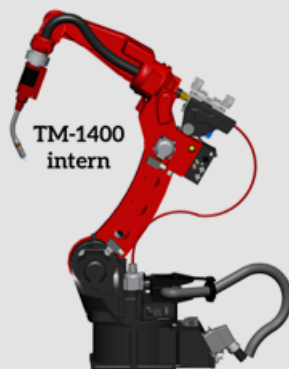
www.vdsculemborg.com

Panasonic

TM- & TL-series arc-welding robots



TM-1400
intern



TM-1400
extern



TM-1400
hybride



TL-1800



Panasonic arc-welding robots, in combination with Valk Welding's software and cell configurations, create a perfectly cooperating team. Valk Welding adds its own developed technologies, such as robot torch, calibration, Program Protection System and seam sens and tracking systems, to enable the optimal efficiency of your welding robot installation. Panasonic offers six different models of the current generation TAWERS™ TM series, which differentiates in the way that the cable management for welding current, shielding gas, compressed air, water cooling and welding wire follow the movements of the robot.

TM-series internal or external

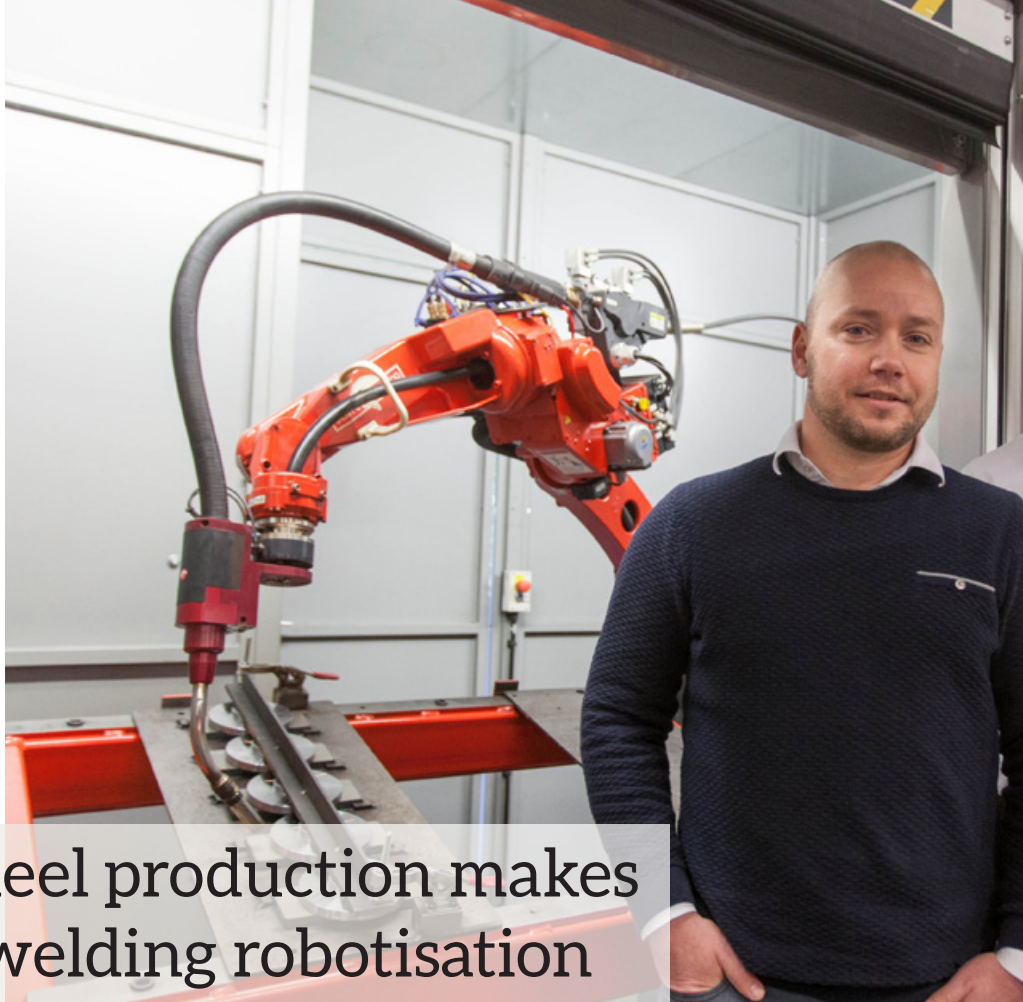
The basic model of the TM-series is available with the cable package through the robot arm (internal) and outside the robot arm (external).

TM-series hybrid model

Moreover, the welding robots program includes a hybrid version, in which only the wire cable runs outside the robot arm, and the cables for welding current, shielding gas, compressed air and water cooling go through the robot arm. The wire cable is lightweight and moves easier with all axis movements than a complete package. This also completely eliminates the 'twisting' of the welding wire during rotation of the last axis.

TL-series

As successors to the Panasonic TA-series, the TL-series has been improved in a number of important fields, such as a larger working range, a more efficient cable management system developed by Valk Welding, as well as an improved wire feed. The performance of the welding robots from the Panasonic TAWERS™ TL-series enables you to influence important factors of your business management, such as quality, accuracy, flexibility, and cycle time, so an optimal efficiency from your welding automation can be achieved.



Specialist in wheel production makes a step towards welding robotisation



Making the strategic choice to operate OEMs with complete systems and keeping production in their own country, gave DM Wheel Systems a profit. With a growth of 70% in the past four years, the step towards automation in the field of welding could not be avoided. "We had already reached the turning point for a long time, but it would cost another year before the welding robot would be here. It takes time to delve into the matter, do tests and train people. Because we had no experience with welding robots, the process took us a year, but the next steps we will take, will be much faster," Frank van Schaaijk says, who runs the company with his brother Christian van Schaaijk.

DM Wheel Systems in the Dutch town Boxtel, designs and produces transport wheels, swivel casters and special wheels for logistics systems, roller coasters, AGVs and mail-order systems. After a merger ten years ago, the company opted to modernize logistics and machinery or to move production to a low-wage region. Frank van Schaaijk: "For that reason, everyone started producing in China at that time. By continuing to produce as one of few in our own country, we were able to serve the market much faster with short delivery times. That turned out to be a good choice afterwards. In addition, we realized that we would be less vulnerable if we could also supply complete systems instead of standard wheels. That meant that we also had to be able to run, do injection moulding, laser cutting and welding. From 2013, we have given our production and logistics a considerable boost with investments and we have grown to 27 employees.

Large variation

DM Wheel Systems is now in possession of a modern warehouse, high-tech turning machines, a laser cutting machine and a Valk Welding arc welding robot system. Frank van Schaaijk: "In the beginning, we only welded large series on the welding robot, but now that we have more experience with the system and we can program a new product more quickly, more and more products are going to be welded on the robot. Within the product families, we are dealing with a large variation in product dimensions and strongly varying batch sizes. This requires a high degree of flexibility in automation."

Welding robot cell complete with welding fume evacuation

The welding robot system consists of a Panasonic TAWERS TM-1400WG3 welding robot with two rotating product tables next to each

other. The cell is completely closed and only secured at the front with fast doors. "The released welding fumes are extracted and filtered. As soon as the suction power of the drain decreases, the filters will automatically be cleaned. The deposited smoke particles on the filters is then collected and discharged as metal waste. This is done, so there will be no harmful welding smoke in the workspace and the outside air," Frank van Schaaijk explains.

Significant time savings

The wheel specialist also supplies special wheel systems for the attraction market. "Then you have to deal with high speeds and high payloads. In that case, the quality of the welding must always be of consistently high quality. We can now also guarantee this with the welding robot. Moreover, we achieve a considerable gain in time when we weld the 'frame' of such large wheels with the robot. The welding



Small firm survives with weldingrobot



Metall.be, a small company that produces garden fences and sells these via the Internet, took a welding robot into operation last year. In addition to cutting, bending and slitting, welding is one of the most important operations within the company. Until recently, Metall.be employed four full-time welders for this specific task. Managing director and owner Stephan Laschet, "After one of our welders retired, we encountered a real problem. It was very difficult to find skilled welders, but young people good at programming were easier to locate. For this reason, we then took the decision to have all the welding performed by a robot."



robot is now finished after 7 minutes, while it would normally cost the manual welder around 45 minutes. All in all, the Valk Welding welding robot system turns out to be the state-of-the-art industrial automation solution in the field of welding. And the robot installation ensures seamless integration into our production process. Now that we work with it, we cannot live without it. We should have started earlier."

www.dmwheelsystems.com

With 10 employees, Metall.be annually processes 360 tonnes of steel for the production of a wide range of garden fences. An interesting volume in order to consider making an investment in robot welding. During an open day with a company located in the region, Stephan Laschet saw how the company had automated their welding production with a welding robot from Valk Welding. "If it works for them, then it should also be suitable for our particular situation," Stephan Laschet thought. "We were able to afford the investment, but we had no experience at all with robot welding. We were also familiar with Valk Welding from technical business journals. For this reason, we invited Valk Welding and visited the main office in Alblasterdam (the Netherlands) in mid-October 2016."

Quick delivery

"Peter Pittomvils, Branch manager at Valk Welding in Belgium, made a proposal for a welding robot with two workstations located next to each other. All mounted on a E-shaped torsion-free frame construction. Valk Welding was able to deliver the system quickly. It was very important to us to have an operational welding robot before the beginning of the main season. For this reason, we made a quick decision," Stephan Laschet explains.

Jigs

"We have previously used jig supports and templates, suitable for different models. After the installation in the winter, we programmed



the first products and defined them with the teaching pendant. Our goal was to have all components completely welded with the robot and we have been able to achieve this. Moreover, we have been able to galvanise the complete fences without the need for reworking."

Welders have been replaced

"Now a new employee without welding experience is working on the robot installation. One welder is working in a different company and the other has a different position in our company. Only small batch series are still welded by hand by employees who also perform the sanding. Generally, the robot now performs the welding work of 2.5 manual welders. In March 2017, we were already in full production for the season."

Flexible

Now, one year later, the employees of Metall.be have gained more experience with the welding robot. "We now weld several different models on a single jig, which is suitable for both high as well as narrow models. In the meanwhile, we have also developed new jigs with which we can weld larger and longer garden fences using the robot installation. In this manner, we are able to utilise the welding robot in a flexible manner," Stephan Laschet explains. www.metall.be



GERMANY



Perfect!

Clemens Technologies welds perfectly without tracking of the welding seams

Tacked workpieces, fix them on the workstation of the welding robot, load the programme and start welding. The daily welding production at the machine factory Clemens in the German Wittlich is that simple. Since the company has started using the welding robot system from Valk Welding, the majority of the products welded by the welding robot do not require tracking

of the welding seams. "With an accurate preparation, the tolerances are so small, the robot's welding programs can be welded directly 1 to 1 by the robot, without corrections, explains Otmar Meiers, production manager of the welding department.

Clemens Technologies develops machines for grapeharvesting, like machines for tillage, storage, harvesting and the filling process. Until 2 years ago, all products were manually welded at Clemens. Due to the development of new products and active processing of the abroad market, the turnover increased from 10 million in 2009 to 23 million in the past year.

Switch-over to robotic welding

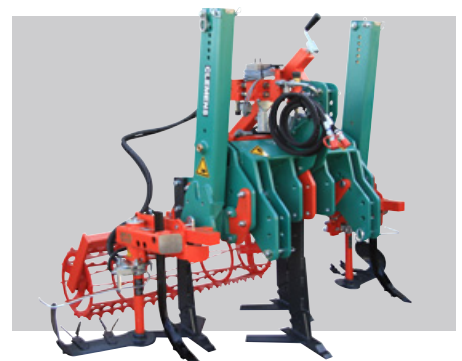
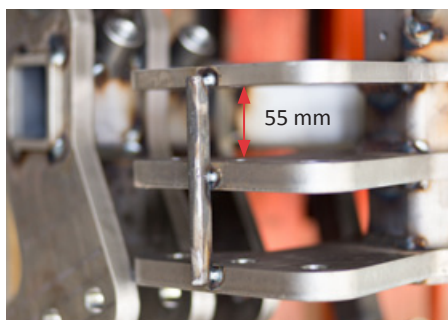
With the increase in welding, it was time to make the step to robotic welding. Production leader Rainer Nau: "We are always looking for new modern technologies, and we have wanted a welding robot for a long time already." A proposal from a German robot integrator did not fully meet our expectations. Someone advised us to contact Valk Welding. Their open attitude appealed to us a lot more. They came up with a compact and simple concept that suits us perfectly. Since January 2016 we are in possession of a welding robot system consisting of a Panasonic TM-1800 WG3 welding robot on an H-shaped frame with on both sides a 2.500 mm workstation with a PanaDice 500 positioner. The cell's small footprint was an important advantage considering the limited space available in the factory. "

Maximum accessibility

Another important requirement of Clemens was the fact that the robot had to be able to weld between openings with a small gap of 55 mm as well. Rainer Nau: "This is the case with most of our soil tillage machines. Valk Welding could guarantee this, and they proved this by fulfilling that.

Small, compact and simple

Otmar Meiers and Rainer Nau, who jointly completed the purchasing process, have opted for the Panasonic TM-type with internal cable package, in which all cables for power, torch cooling, compressed air, and the welding wire run through the cable package. As standard, all Panasonic welding robots are equipped with a robot torch with a pneumatic shock sensor, developed by Valk Welding itself. In case of collision, the robot immediately stops, after which the operator can restart the robot immediately, without the robot having to be re-calibrated. Otmar Meiers: "Initially, we thought working with the welding robot would be complicated, but that turned out not to be the case. The entire installation was easy to operate and therefore could be integrated in a short production time. Since two employees at Valk Welding in Alblisserdam have been trained, everything runs smoothly."



50% faster

Clemens produces all standard components in stock, so they can be delivered directly to the assembly department per order. More than 85% of all welding work is done by the robot. The welding robot system is now fully occupied in a 2-work shift. This involves series of an average of 200 to 300 pieces, with outliers to 2,000 pieces. Only specialized work is still manually welded. Rainer Nau: "Compared to manual welding, we save 50% of the time by using the welding robot." Without the welding robot, we could not have carried out the production."

www.clemens-online.com



Production leader Rainer Nau: "Without the welding robot, we could not have realized the production"

Valk Welding welding wire

For the welding robot, Clemens uses Valk Welding welding wire SG2 and SG3. Otmar Meiers: "The first tests with Valk Welding welding wire went quite well: the weldability and feeding was smoother than what we were used to, which meant we had no more malfunctions. In addition to welding wire in the drums for the welding robot, we now also use Valk Welding welding wire for the manual welding department."



FRANCE



Increase of quality and productivity

ROBIN utilises the latest technology



After several years of experience with robot welding, the French supplier ROBIN was searching for possibilities of increasing both quality as well as productivity. This led to the investment in a Valk Welding robot installation with offline programming, suitable for MIG and TIG welding. "The new

robot welding installation had to be suitable for a wide range of products and materials and furthermore feature 100% of-line programming. With their technology, unique solutions for seam searching and offline programming, we felt that Valk was a step ahead in robot welding," ROBIN's CEO states.



The family business situated in the French Vendée department supplies industrial sheet metal products for various industry sectors from agricultural machinery to steel structures and from street furniture to industrial vehicles. 65 employees work in the 9,000 m² workspace that is equipped with machinery for laser cutting, bending, welding and assembly. The volume sizes range from prototypes to serial production using steel, stainless steel and aluminium.

Long-term experience with welding robotization

ROBIN has been utilising welding robots since 2000, of which until last year three systems were still used in production. "The issue was that the existing welding technology did not provide the expected quality with stainless steel products. Due to the outdated technology, we encountered problems in regard to seam sensing. Moreover, we were only able to perform MIG welding, while we also have a requirement for a large amount of TIG welding," Mr Robin explains.

Higher quality required

The new welding robot system must be suitable for both MIG as well as TIG welding. "The product requires both welding processes, for this reason it was necessary to be able to quickly switch between both processes. Therefore, we wanted to achieve a higher welding qual-

ity with stainless steel and a better repeatability during the production phases. We had already researched into the technology and the concept of the welding robot systems offered by Valk Welding for a few years. A relationship built on mutual trust had been established in the course of this period. We felt that Valk was a step ahead with their technology and knowledge of robot welding.

A visit to a number of references and their head office in the Netherlands confirmed this," Mr Robin states.

Panasonic arc welding concept

Valk Welding uses Panasonic arc welding robots in their robot systems. Panasonic has developed these specifically for the arc welding process and produces all components and the software in-house. Welding robot, power source, controller, wire feeder, positioner and software are all optimally tuned to each other. Panasonic has become one of the most innovative manufacturers in this field.

Complete installation on a single frame

The entire system, comprised of a Panasonic TL-1800 WG3 welding robot and two workstations with a length of 3,500 mm each and capable of handling loads of up to 1000 kg, is built on an E-shaped torsion-free frame construction. Because all components are built on a single frame,

Latest technology with Valk Welding turnkey welding robotsystems

Panasonic Best-in-Class arc welding robots

Panasonic robots are specifically developed for the arc welding process in which all components and software are produced in-house. The welding robot, welding machine, controls, wire feed system, positioners and software are therefore optimally tuned towards each other.

- Spatter-free welding quality
- Fast acceleration and displacement speeds (up to 180 m/min)
- Lower operating costs
- Easy to operate and programme
- Welding machine integrated in robot controller
- Integrated welding data registration and monitoring
- MIG, MAG, TIG with just one single machine

Valk Welding 'Easy Programming'

User-friendly programming is of great importance to the flexible application of Valk Welding welding robot systems. In close partnership with Panasonic Valk Welding has developed Easy Programming, in which all knowledge and experience is incorporated in both standard (DTPS) and customer-specific software modules. In that way Valk Welding makes programming a lot easier and more straightforward for the customer. At the highest level of Easy

Programming the welding robots are even automatically programmed on the basis of 3D CAD data.

Valk Welding calibration

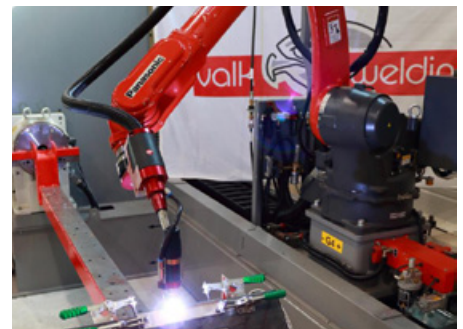
Recalibrating the robot is usually a time-consuming business or at some robots not even possible. For this purpose Valk Welding has developed a smart system (Program Protection System), which makes it possible to re-calibrate a robot in just 15 minutes after a crash, replacement or relocation in order to minimise downtime and avoid re-programming.

Valk Welding robot torches

Valk welding uses its own, self-developed robot torch for its welding robot systems, complete with pneumatic shock sensor, cable assembly, patented wire clamping mechanism and quick-change goose neck.

Valk Welding seamtracking

To check the proper position of the the workpiece, additionally touch sensing using the wire or the gas nozzle Valk Welding has developed the Arc-Eye laser tracking system, which monitors the welding seams real-time and guides the welding robot correctly along the welding seam.



this facilitates the achievement of savings in the area of logistics and the required floor surface. Moreover, less programming and no calibration work is needed. The frame can be moved in its entirety and immediately taken back into operation without the need for programming changes.

Offline programming

Offline programming makes it possible to program the robot installation without having to interrupt ongoing production, resulting in increased productivity. With more than 750 users, Panasonic DTPS software (Desktop Programming System) is one of the most commonly used of-line programming software systems for welding robots in Europe. "Two of our employees have been experienced in programming for several years, working on our welding robot cells, which have been especially intended for the welding of steel components. The week before the arrival of the new welding robot, they attended a two-day training course at Valk Welding and furthermore an additional two days following the start-up of the installation in our company. After we had taken the installation into operation for several months, we also scheduled three additional training days in order to complete the training. First, we wanted to familiarize ourselves with both the hardware as well as the TIG process before we continued with the training," Mr Robin explains.

Quickly change between MIG and TIG

One of the advantages of the Panasonic system is that both MIG as well as TIG welding processes can be used with the same power source, cables and wire feed system. Only the polarity of the power source has to be reversed. Thanks to the quick coupling on the gooseneck of the Valk Welding robot torches, the changing of the welding torches is very simple. It only takes a few seconds. Moreover, the robot does not require recalibration when the welding torches are replaced.

Increased productivity

In daily practice, the Panasonic welding robot offers a marked progression of the quality of the weld seam, reduction of the weld splashes and a constant welding arc. The high speed of installation both during the movement of the welding robot as well as during welding, enables a substantial increase of productivity. Furthermore, the searching of the weld seam with gas head searching or with the welding wire (Quick Touch) ensures a reliable process and a high degree of repeatability. The simplicity of use, including the calibration, enables operators to perform their daily work in an autonomous manner.

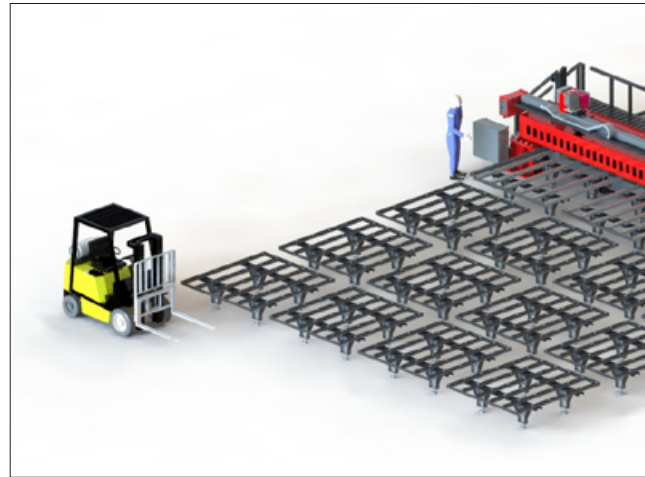
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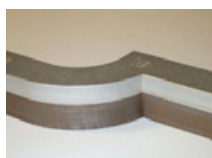
ADK Technique developed special clamping benchsystem for Shockwave Metalworking Technologies BV

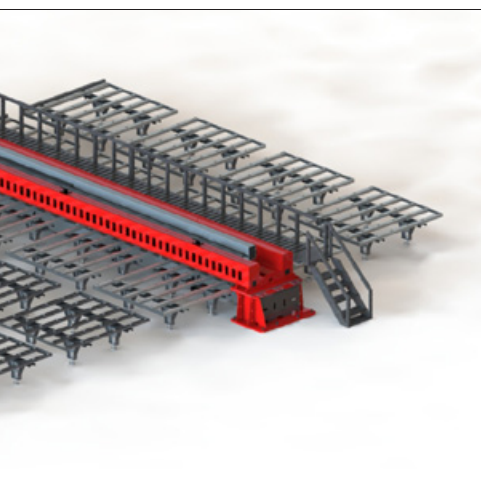


Longitudinal welder plays crucial role in production process clad plates



In industrial sectors, such as ship-building and petrochemistry, clad plates are applied for the protection against corrosion, high temperatures or high pressure. The Dutch company Shockwave Metalworking Technologies BV is specialised in the production and supply of Techniek specialised plate materials by means of explosion welding. SMT asked ADK Techniek, part of Valk Welding group, to develop a special longitudinal welder to join high-quality non-ferrous plates with standard to larger dimensions, prior to being cladded with steel plate through explosion welding. For this special application, ADK Techniek delivered a welding clamp system with a welding length of up to 10 meters, provided with an Arc-Eye laser vision welding seam tracking system and Plasma Keyhole welding equipment.





Explosion welding is a joining technique, based on pressure welding, in which flat materials form an atomic connection under high pressure. The technique is mainly used to weld two plates of dissimilar materials, for instance, aluminium and steel and/or Inconel and steel. The clad plates that are obtained with this technique, are not only used for ship-building and petrochemistry, but also for oil and gas industry, desalination plants, steel factories and hydrometallurgy, aluminium smelters, energising and other industries in which corrosion, temperature, and pressure play a crucial role. SMT is one of few suppliers in Europe that produces and delivers clad plates with plate dimensions up to 10 meters in length and 2.5 meters in width.

Standard dimensions too small

Managing director Reinier Hofstede from SMT: "Because of the large-scale application, the market demands clad plates with plate dimensions up to 10 meters in length and 5 meters in width. However, high-quality non-ferrous plates like aluminium, Titan, Inconel, etc. are exclusively available in standard dimensions up to 1.5 and 2 meters in width. With the help of a good welding clamp, you can perfectly weld those non-ferrous plates with the Plasma Keyhole welding process to larger lengths, with the big advantage of not having to provide plates with a thickness up to 8 mm with a welding seam preprocessing."

Improving quality

Until recently, SMT outsourced those proceedings. "When carrying out that work ourselves, we can save on transportation costs, and improve the quality of the welded plates. The conditions for being able to deliver high-quality, are optimal clamps, absolute smoothness, optimal cooling, a minimum input of warmth and a supply that immediately corrects every deviation of the position of the welding seam," Hofstede explains. "ADK Techniek, part of the Valk Welding group, which has demonstrable experience in construction of welding clamps, could comply with that, has the required welding knowledge, can provide the necessary support, and is settled not far from us."

Plasma welding torch moves about 10 meters in length

ADK Techniek built the longitudinal welding system on the base of a frame with a length of more than 10 meters, on which is installed a welding rail, clamping device, and a servo-motoric adjustable X-Y support with water-cooled plasma welding torch. To weld non-ferrous plates from 3 to even 8 mm or more perfectly smooth without deformation, pneumatically operated clamp fingers are able to move independently. The plate parts are supported on the bottom by a beam which is equipped with water-cooled copper underlay under its full

length. Through the Plasma Keyhole process, the plates are welded together which guarantees 100% through-welding.

Arc-Eye welding tracking system

To be sure the plasma torches follow the welding seam over the full course of 10 meters, both in horizontal and vertical direction, an Arc-Eye laser vision welding seam tracking system is integrated. Reinier Hofstede: "When you weld two lengths together, the seam is never straight. The use of the Arc-Eye laser vision makes sure every deviation is corrected in real-time. That also makes the uninterrupted welding process possible, which is crucial for the quality of the junction."

Process time greatly shortened

The longitudinal welding system is being used a couple of days a week, and besides the save on transportation costs and the improvement of the quality, it also substantially saved a lot of time. Now that we are able to weld high-quality plate materials of large dimensions by ourselves, we were able to shorten the process time greatly.

www.smt-holland.com

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Capacity	10 000mm	E-mail	info@adktechniek.nl
Gewicht	12 000kg	E-mail service	service@valkwelding.com
Welding	200VAC 3+1+N+PE 16A	Internet	www.adktechniek.nl
Bouwjahr	11/2017		

Activities ADK Techniek fully integrated

ADK Techniek is specialized in the engineering and construction of dedicated welding machines for welding and cutting processes. The know-how available at ADK Techniek, regarding that area of expertise, is a valuable addition to the activities of Valk Welding. Since the takeover of ADK Techniek by Valk Welding in 2012, the company has received several orders for large installations of dedicated welding machines.

In the meantime, the company has been fully integrated in the Valk Welding organization. Technical advisor Henry van Schenkhof and manager Arie Stam: "As part of the Valk Welding group, we now also serve larger companies and we have even been able to expand our target group beyond the borders of the Netherlands." With the construction of customer-specific installations and software for such applications, ADK Technology has a unique position and offers the company to be a valuable addition to the welding robot solutions of parent company Valk Welding.



SWEDEN



Henjo welds complex workpieces with the use of two drop centers

Henjo Plåtteknik AB, supplier of sheet metal products and complete welded assemblies, situated in Ljungby in Sweden, has been utilising welding robots for a longer time. When the company began searching for a new welding robot four years ago, offline programming was the most important requirement.

Kalle Meijer, production manager at Henjo, "We found the right solution in the Panasonic welding robot system with integrated offline programming. Ever since, thanks to offline programming, we weld small batch numbers without having any downtime!"



Kalle Meijer, "Offline programming was at the top of our list of requirements because until recently we had spent a great deal of time on the programming of our previous generation of welding robots. As a supplier, we must produce a great variety of components. For this reason, it is vital that the start-up time of the welding robot is short. Furthermore, accuracy is another important aspect. In the case of offline programming, you must be sure that the virtually programmed part corresponds to what the welding robot actually fabricates. For this reason, we examined the different types of off-line programming systems. 100% of the programs created in the DTPS offline programming software can be used on the robot, without the need of any corrections. We were, and continue to be so, very impressed by the accuracy of the DTPS software. This was a decisive factor for choosing Panasonic. Does it work? Off course, we use it every day!"

Welding robot integrator Valk Welding installed the welding robot installation including the DTPS software and provided training and support during the commissioning process. The installation exists of a Panasonic TA-1800WG3 welding robot on a track and two workstations located next to each other. The entire system is

built on a so-called E-shaped frame construction, which can be installed quickly and can be moved at any moment to a different location without the need for disassembly due to it's rigid construction.

One station has a single axis positioner and the other is equipped with a drop center. Kalle Meijer, "With this configuration, we were able to weld two different parts at the same time. With the drop centre, the robot has a maximum accessibility in the event of complex products. Because of this reason, we made this year the decision to also expand the other station with a drop center. The reason for this was the increased demand for components in which a positioner with two axes is required. Just like the requirement for more flexibility."

"In addition to one employee working on the offline programming, there are also operators involved in the process. Furthermore, our welding specialist and production technician are involved in the preparation of the programming and welding process. After the installation of this cell with two drop centres, we were up and running within a single day and were able to transfer the programs from one station to the other by means of copy and paste without the need for a single correction."

www.henjo.se



Tradeshows

Elmia Automation 2018

Jönköping, Sweden
15-18 may 2018

Vision, Robotics & Motion

Veldhoven, Netherlands
6-7 june 2018

TIV Hardenberg

Hardenberg, Netherlands
18-20 september 2018

MSV Brno

Brno, Czech Republik
1-5 october 2018

Expowelding 2018

Sownowiec, Poland
16-18 october 2018

NIL verbindingsweek

Gorinchem, Netherlands
30 october - 1 november 2018

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The strong connection