



## Marel takes next step in automation with welding production cell

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**If you can automate the loading of products onto machining equipment, that must also be possible for the welding production. That was the underlying idea when Valk Welding, working in partnership with Marel Stork Poultry Processing, developed a production cell in which the handling and logistics surrounding the welding robot are automated. The result is a welding production cell that produces completely continuously, is entirely designed for one piece flow production and yields a substantial saving in manpower.**

The smaller components (up to 500 x 500 mm) for the poultry processing machinery of Marel Stork Poultry Processing are manufactured at the production establishment of Marel Stork in Dongen, and since recently a number of components have also been assembled into sub-assemblies there. The products are fully developed and finished at the main establishment in Boxmeer. Industrial Engineer André Kouwenberg: "There has always been a lot of technical know-how in Dongen (Stork PMT), which is extremely valuable to us." The technical know-how is reflected in the drive to always be the first to adopt new production technology. Marel Stork Poultry processing became involved in welding robotisation at an early stage, and in 1996 was one of the first users of Panasonic's offline programming system DTPS. This was also Valk Welding's first customer for a welding robot with the Arc-Eye laser sensor.





### Full confidence in the supplier

André Kouwenberg: "As early adopters we are usually closely involved in the development of new technology. When it comes to welding Valk Welding and Panasonic incorporate a lot of our feedback in later versions. That open approach and the short lines of communication have resulted in our gaining a lot of confidence in Valk Welding's people over the past 25 years, which is why we were willing to take on the development of the new production cell. There are probably other system integrators that are able to do this, but Valk Welding is increasingly raising its profile in this market with its specific knowledge of welding matters."

➔ *continued from front page*

### Continuous workflow in new production concept

Marel Stork Poultry Processing, which builds their machines to order, plans to use the new cell to facilitate a continuous workflow in production. André Kouwenberg: "That means that we will produce as little as possible in batches, but will instead place the entire process from laser cutting, welding and milling in a single flow. If for example we need 20 components, we won't wait until all 20 are ready but will send each completed product straight to the milling department. That actually amounts to working according to the Quick Response Manufacturing principle, which we have 'borrowed' from car manufacturers. Each part has to be processed directly without creating any dead time and the delivery times are kept as short as possible."

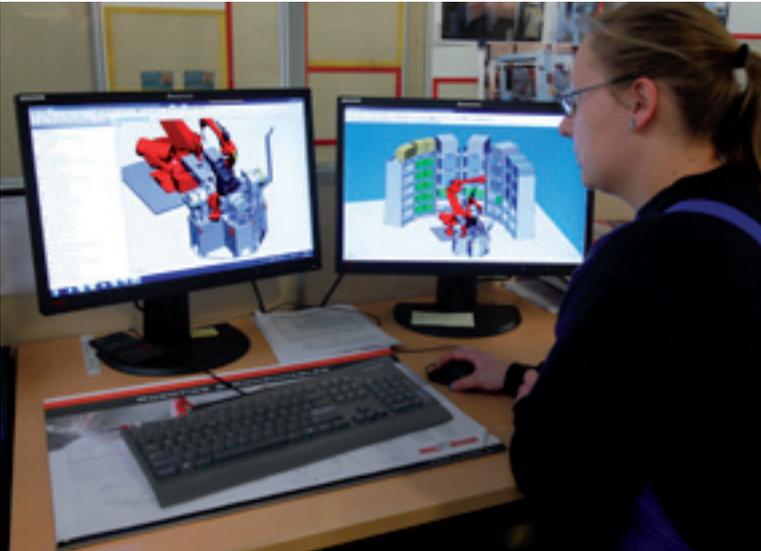
### Handling robot operates welding robot with 2 workstations

In the new production cell parts are clamped onto pallet carriers and stored in one of the 58 pallet positions in the warehouse. When a part is to be welded a handling robot (Panasonic HS-165) collects the pallet in question from the warehouse and mounts it on one of the two workstations of the welding robot (Panasonic TA 1600). While the welding robot is welding the component, the next pallet is changed on the other workstation. As soon as a pallet has been welded with one or more components, the handling robot places it back in the warehouse. "The cell contains 58 jig carriers with a total of 240 different jigs. By creating the right combinations between fast and slow movers you achieve the right production balance to maintain a continuous workflow, explains André Kouwenberg.

### Complete cell instead of 2 standard cells

Valk Welding was also able to meet Marel Stork Poultry Processing's requirement for 2 standard cells. Valk Welding's sales manager Cees Wierenga: "But that still calls for extra manpower to convert the clamps and place the products in the two cells. The fully automated cell is 'operated' by a single operator who takes the parts to be welded in and out of the pallet carriers outside of the cell in an input/output location. André Kouwenberg: "For that reason we used a simulation process to compare the yields of both processes. This showed that the process in one complete cell could be operated by just one person per shift. This gave us the green light to go for our aim of achieving a continuous workflow.

*All products are programmed outside of the cell*



*The handling robot collects the pallets from the 'warehouse'*



## Software determines production

The software determines which part is to be welded first. The software advises the operator rather than the other way around. The operator can however interrupt the system if the workflow for a simple part has to be stopped. Cees Wieringa: "For that purpose there is a third workstation at the front of the cell where the operator can insert and take out a component himself. Without that option the system would be too rigid and you would run the risk of the assembly having to wait needlessly for a single part." The software was written entirely by Valk Welding's software engineers.

## Automatic torch change

To ensure that the welding robot can be used with the MIG and TIG welding and TIG with **wire feed**, Valk Welding has developed a torch change system that is integrated in the cell. In this system the swan neck of the Valk Welding robot torch can be automatically changed without any manual intervention in the production process being required. The pallet carriers manufactured by Marel Stork Poultry Processing are divided into whole, half and quarter measurements. The carriers are equipped with a Schunk clamping connector and are picked up in mirror-image form by the handling robot with the same type of connector.



## Farewell to old generation VR006 ALE2

Now that the new production cell has been taken into use Marel Stork is bidding farewell to the old Panasonic WG welding robot with 3 work station on which the components have been manually clamped over the past 14 years. André Kouwenberg "The old cell typifies the automation method that we used in previous decades. With the latest robot technology and logistics automation we will be able to move forward efficiently and flexibly for another 10 years."

[www.marel.com/poultry](http://www.marel.com/poultry)

*The robot takes the pallets of products to the input and output location*

*Products are put in and taken out outside of the cell*





**LASAUTOMATISERING**

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- Lasapparater
- Lasroboter til design og montage
- Lasroboter til montage
- Lasroboter til montage
- Lasroboter

More over automation

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- Apparatreparation
- Reparaturservice
- Reparaturservice
- 24 timer service
- 24 timer service

More over service



## New website, new corporate identity

## New pay-off

Valk Welding has revamped its website. Visitors will now find their way easier through a wide range of products in the areas of welding robotisation, welding technology, welding accessories, specials, handling systems, courses and software. The forum is now also integrated in the new website [valkwelding.com](http://valkwelding.com). Customers with their own access code can exchange experiences, questions and information here. The videos on our own YouTube channel can now also be viewed directly on the website.

The website's new fonts and colours have given it a fresh, contemporary look that will be introduced step by step in the rest of the corporate communication.

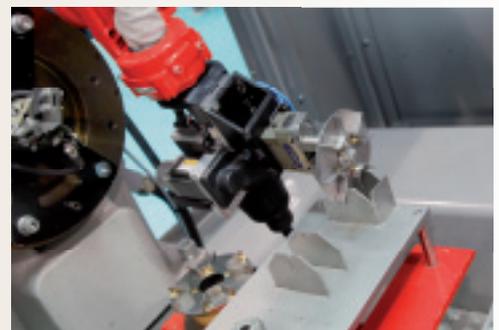
[www.valkwelding.com](http://www.valkwelding.com)

The 'strong connection' is the new pay-off that Valk Welding will be using in all of its corporate communication. Valk Welding invests continuously in close ties with its customers, suppliers and employees. With this new pay-off Valk Welding is looking to highlight those close ties. This also expresses the firm bond between the family firm Valk Welding and its employees.

Valk Welding sees it confirmed time and time again that customers want to build an ongoing customer-supplier relationship. Customers have a need for a supplier who puts himself in their shoes, provides top level support, communicates intensively and empathises with the customer's product.

Or in other words, a supplier that is willing to connect with its customers.

By putting itself in its client's shoes as a supplier, providing top quality support, intensively communicating and relating to the customer's product Valk Welding sets out to achieve the best solution in partnership. Putting the customer first and working together on an ongoing relationship based on partnership comes naturally to us. This results in coming up with the best solution together, in such a way that the supplier can switch flexibly and the customer doesn't waste any valuable time."



## Assembly and welding combined in one cell

**During the Techni-Show Valk Welding displayed a welding robot in a compact cell in which the entire assembly and welding of thin-walled work pieces is carried out completely automatically.**

For this purpose the welding robot is equipped with a manipulator mounted next to the welding torch. The welding robot uses the manipulator to pick up the separate parts, place them in the right position and weld the assembly. Half-way through the process the work piece is turned on a middle station so that the opposite side can be welded. The completely welded work pieces are taken away on a conveyor belt.

### Active Wire welding process

A unique aspect is that this involves welding small, thin-walled parts that are welded quickly with MIG without any spattering. Valk Welding uses the Active Wire welding process for this. Active Wire is a combination of Panasonic's existing SP-MAG welding process and wire feed control, in which the welding wire makes pulling movements during the MIG welding process at high frequency. That way the weld is made with a highly stable droplet transfer and very low heat transfer.

Thin-walled materials welded with the Active Wire process therefore do not deform. Even butt-welds on 0.5 mm stainless steel plates are applied without deformation and spattering.

Whilst welding thin-walled stainless steel with the TIG process is more sensitive and slower than MIG, with Active Wire Panasonic makes it possible to weld thin-walled materials, but also galvanised steel, faster and without spattering. Active Wire thus bridges the gap between MIG and TIG.

### Special drive motor

For the Active Wire process the welding robot is equipped with a combination torch in which the wire feed motor is incorporated. Integrating the motor makes it possible to have the wire make high-frequency pulling movements just on the work piece. The Active Wire process is regulated directly from the robot controls without the need for two separate systems for the welding machine and robot.

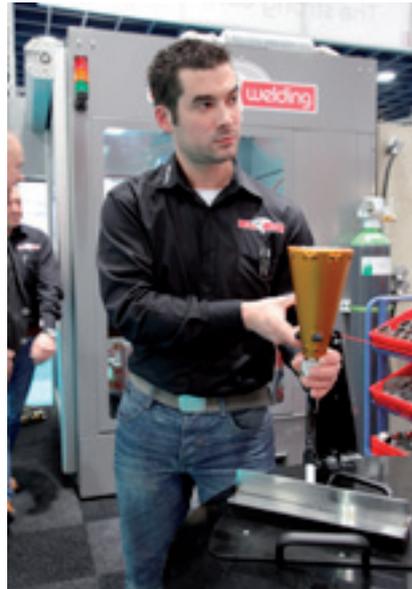
## Welding robots quickly and simply programmed with 'welding torch'

### OFF | SITE

Last year Valk Welding announced the development of a tool that makes it possible to quickly and easily program a work piece for the welding robot outside of the welding robot. The tool has now been developed into a fully-fledged programming system that was demonstrated at the Techni-Show under the new name 'off-site teaching'.

A teach-pendant directly on the welding robot can be used to programme a work piece for the welding robot. This can be done quickly and easily thanks to the G3 Weld Navigation system, which automatically generates the right parameters for current strength, voltage and welding speed. The downside is that the welding robot cannot be used for production as well. For that reason many companies are switching to offline programming with Panasonic DTPS, with which the most complex work pieces, including welding jigs, can be programmed.

But the step to offline programming remains too big for many companies, especially suppliers. Also, manual welders find welding in the workshop preferable to working at a computer screen. With 'off-site teaching' Valk Welding now offers an alternative with which a program for the welding robot can be written quickly and easily outside of the welding robot.



*The welder guides the hand tool in the correct position along the seams*

The system consists of a hand tool, a camera and software. The principle of 'off-site teaching' is that a manual welder guides the manual tool in the right position along the horizontal seams of the work piece. That way the right welding orientation is immediately assumed and the process laid down. Once the desired points have been learnt the software processes the data in a program for the welding robot. That program can be checked on a computer, adjusted if necessary and then sent to the welding robot.



*The software processes the data in a program for the welding robot*

The advantage of this programming method is that a program can be written for the welding robot quickly and easily, without production on the welding robot having to be interrupted. In everyday practice suppliers do not always have access to a 3D drawing of what is to be made. With 'off-site teaching' the manual welder can get down to work straight away, without a drawing.

See also the film clip at:

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

## Retrofit for mechanised welding setups



ADK Techniek, which has been a division of Valk Welding since 2012, specialises in the engineering and construction of special devices for applications where positioning, welding and cutting take place. In partnership with the Arc-Eye team of Valk Welding, ADK Techniek has developed the retrofit unit ARK 6-2 to upgrade the existing systems for the circular welding of stainless steel industrial liquid tanks. The system provides a modular welding system with the Arc-Eye laser sensor that precisely detects and follows the welding

seam. For this purpose the Arc-Eye laser vision sensor scans the welding seam, and the software compares the position of the welding torch with the programmed track and adjusts the route if necessary. This results in precise position and this high-tech system contributes to an extremely high and consistent level of welding quality. The Arc-Eye laser vision sensor is unhindered by reflections and is therefore ideal for reflecting material types such as aluminium, steel and polished stainless steel.

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

# 600 m welding work for AGVs on the welding robot

## Valk Welding delivers welding robot system to VDL Containersystems

Together with eight other VDL companies for the Europe Container Terminal (ECT) in the Rotterdam seaport, VDL Containersystems has developed an Automatic Guided Vehicle (AGV) that can be used to unmanned sea container transport. The first AGVs were welded entirely manually, but VDL Containersystems recently installed a welding robot system from Valk Welding. VDL will be programming some of the welding programs for the welding robot itself using Valk Welding's offline programming system. That will not only save VDL a great deal of time with the welding work, but will also guarantee consistent quality.



ECT Rotterdam, Europe's biggest container transshipment company, has already been using AGVs for twenty years and asked the VDL Group to develop a new, replacement model at the end of 2009. A completely new generation of diesel hybrid AGVs was developed and built in just 12 months. This was done under the management of VDL Containersystems in close partnership with VDL Steelweld. The development concentrated on lowering the maintenance costs and power consumption. Based on the prototype ECT Rotterdam has

continue to produce competitively in its own country. That is only possible with automation, so using a welding robot for this project made perfect sense. Because the AGV project is already completely underway, there was a need for the fast delivery of a properly working welding robot system. Welding robot integrator Valk Welding has ample experience of turnkey projects and has already made very good progress with offline programming. Valk Welding was able to work simultaneously on both the hardware and the programs. One of

### Unmanned container transport

The ships at this terminal are loaded and unloaded almost entirely with unmanned vehicles that are controlled by a central computer. A wharf crane places the container on the AGV, which then automatically takes it to its place in the stack, where it is put in the right place by an ASC (Automated Stacking Crane). The new AGV generation developed by VDL can transport a load of 70 tons, is suitable for all container types and travels unmanned over the port area at a maximum speed of 21 km/h. See also the film clip at: [www.youtube.com/watch?v=7giV074qBXA](http://www.youtube.com/watch?v=7giV074qBXA)



placed an order for 85 AGVs that VDL is to deliver in 18 months.

### Turnkey project

The new AGV has an overall length of almost 16 metres and weighs 27,000 kg. Virtually all of the welding work on the AGV is done at VDL Containersystems. The power pack and wheel suspension are then assembled at VDL Containersystems, after which VDL Steelweld in Breda deals with the system integration. The chassis alone involves 600 m of welding. Company manager Mark Verdon-schot: "The VDL Group's policy is to

our employees spent 1 day a week in Alblasterdam during the project to write the programs for the wheel suspension and the power pack under Valk Welding's supervision while the Valk Welding programmers programmed the chassis. The turnkey Valk Welding system was delivered in March, and the chassis was welded within the agreed takt times."

### 600 m of welding per AGV

The product is divided into several steps to ensure that the welding robot can reach all of the welding seams. First of all components are



added to a jig and attached to the chassis. These components are then welded on the robot. These steps are repeated a number of times until all of the components have been attached. Mark Verdonshot: "The welding robot makes it possible for us to weld a chassis three times faster. That not only enables us to achieve a high level of efficiency: we are also able to consistently maintain the welding quality at a high level. By using robots we expect to be able to deliver the required numbers in 18 months, without having to work in shifts. We can always change gears if necessary."

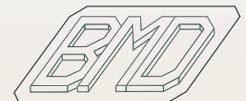
### VDL Containersystems

VDL Containersystems develops, produces and sells a wide range of hydraulic container handling systems. The company specialises in hook lifts, gantry lift and cable systems, container trailers and containers for lorries, trailers and agricultural vehicles. Spreaders and automatic guided vehicles (AGVs) are made for the transshipment of ISO containers. Service and after sales are provided by a worldwide network of local partners. VDL Containersystems is a division of the VDL Group, an international industrial company comprising 81 operating companies in 18 countries and employing over 9,100 people. [www.vdlcontainersystemen.com](http://www.vdlcontainersystemen.com)



Menno Brok of Bromedo Metaal b.v.:

## “Customer wants robot weld as standard quality”



**More and more customers are requiring the quality of robot welding as standard. According to Menno Brok of Bromedo Metaal, once they have become accustomed to the quality of robot welds customers are becoming less willing to accept the quality of manual welding. The demand for the series size that the welding robot is used for is therefore becoming less important. As a result of this Bromedo soon found itself facing problems with the capacity of the welding robot system. "The trouble was that we didn't have enough space for a second welding robot on an H-frame." Valk Welding responded to this by building a compact welding robot cell of 2 x 2 m for Bromedo. "We're now only using that for small products. A perfect addition to the bigger cell."**

Bromedo's turnover has barely been adversely affected in recent years. Menno Brok: "Quite a few companies have gone bankrupt because of the crisis. That means that outsourcers have to go in search of another supplier. We're also benefiting from the good reputation we've built up over the past 22 years and are delivering our own product in the form of the Esmono noise-damping drum cabins. We are now a financially healthy company with stable growth in turnover and employing 29 people." The Menno and his brother Jeroen Brok took over the company from their father last year.

### Retaining work thanks to the welding robot

The use of robot welding has provided an effective way of gaining customer loyalty for Bromedo. "Without the welding robot we'd have lost a lot of work. The switch from manual to robot welding made it possible for us to pass on the benefits of automation in the form of more competitive pricing for customers. But customers expect not just a competitive price, but a consistently high level of quality, too. For on-call contracts each batch, however small, must be delivered with the same welding quality. You can offer that guarantee to customers with a welding robot, but not with manual welding. In more complex frames there are so many welds that there is a good chance of welds being forgotten if the work is done manually. This increa-

ses the chance of rejection as compared to robot welding, which also guarantees that all of the welds have been done. No rejected products leads to customer satisfaction and bigger returns. The returns are found not just in the capacity utilisation and cost savings, but above all in the consistently high quality and high replication precision. That means a double advantage", explains Menno Brok.

### Compact robot welding cell

With dimensions of 2 x 2 m, the cell that Valk Welding has built for Bromedo can be described as very compact. Menno Brok "The lack of space prompted us to consider a small cell, and the existing welding robot system with 2.3 m work stations is in many cases too big for small products. The small cell is equipped with a Panasonic TA-1400 welding robot on a single work station with a clamping bench of 1.5 m that can be continuously manipulated by a Panadice. "The manipulator means that the accessibility of the welding robot is no longer limited. The cell is also supplied with a high speed door at the front. The advantage of a complete and integrated system is that you can always extend it with a second work station on the other side and can carry out TIG as well as MIG welding. We are already doing that with the larger cell that Valk Welding supplied in 2009. But we use this compact cell exclusively for MIG welding of steel products."

[www.bromedo.nl](http://www.bromedo.nl) - [www.esmono.nl](http://www.esmono.nl)



KUHN-Geldrop BV, one of the Netherlands' biggest agricultural machinery manufacturers, is one of the early adopters in the area of robot welding. As PZ Landbouwmachines (Zweegers), later taken over by KUHN, the company has been a customer of Valk Welding's since the nineteen-eighties. Johan Brandes, coach parts team, has therefore experienced the development and progress of all of the welding robot generations.

KUHN now has six welding robot systems, the most recent of which is on an E-shaped structure. "We work on getting the most out of the welding robot systems in partnership with the people at KUHN and Valk Welding. We consider not just the welding robot, but also everything else involved, such as welding wire, the wire feed, operator training, aftercare and even the internal relocation."



Johan Brandes, team coach parts KUHN:

## "Complete Valk Welding packages gives us continuity"



*In the 80s, the company bought the second welding robot ever supplied by Valk Welding*

Valk Welding delivered the two welding robot systems on an E-frame to KUHN in Geldrop in order to replace and extend the capacity. Both systems feature a Panasonic robot type TA 1900 WGH3 with the unique Weld Navigation system. Both robots are mounted on a torsion-free E-frame with 2 stations equipped with a PanaDice 1000 kg external shaft manipulator. Johan Brandes: "We weld two hundred different welding sub-assemblies on the welding robots. The good thing about the E-shaped frame is that you can clamp several small objects next to each other on it and leave the welding robot to get on with the work while you clamp new products onto the adjacent station. The very short reconfiguration time from one station to the other enables us to achieve a much higher switching duration than the other system concepts."

### Robots on E-frame completely movable

The choice of a torsion-free frame was initially made in response to the relocation plans. Both frames can later be moved as a whole to the new location and put virtually straight back into use. Johan Brandes: "The welding robots of another supplier do not have that advantage, and have to be completely dismantled and reassembled at the new location, and then completely reprogrammed/corrected. That takes a lot of time and money."

### Welding wire drum no longer on trolley

"But the fact that the people at Valk Welding also give careful thought to the peripherals serves to increase the welding productivity. Take the use of the Wire Wizard wire feed system, for example. This feeds the welding wire smoothly over a distance of over 10 metres to the welding robot, and the drum can be placed at an easily accessible place outside of the system. With the welding robots of other makes that we use, the vessel moves with the system on the trolley. Placing a full drum

causes a lot of positioning problems and increases the chance of damage being caused by having to shift 250 kg. The pneumatic shutdown system is another good example, also a product of welding know-how. In the event of a crash the welding robot is shut down much more quickly by the pneumatic shutdown system and we are able to put the robot back into use within a few minutes, without any complicated calibration procedures. Valk Welding carefully considers aspects such as these, which raises the OEE (Overall Equipment Effectiveness) of our welding robots to a very high level."



### Welding wire quality important

KUHN has already been using Valk Welding's SG2 welding wire for some time. Johan Brandes: "This welding wire is known for its consistent quality and torsion-free unwinding. The result is an uninterrupted wire feed."

### Big gains from offline programming

The biggest advantage of the transition to the latest generation Panasonic TA 1900 WGH3 is that the offline programs could be directly transferred from Panasonic DTPS. Johan Brandes: "Since there was virtually no difference between the two generations after the conversion, we had the robot system up and running after just 2 days. We've been working with DTPS for quite some time. We import the 3D product from CAD and set up the welding program in DTPS. If the programming is right, we can transfer it to the welding robot virtually without any corrections. During all that time the robot just gets on with its work."

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



# Full order portfolio leads to the purchase of 3 extra welding robots

Elmar Metaalbewerking expands welding capacity strongly



Elmar Metaalbewerking has already had its hands full with work for its existing clients for many years. "We've got so much work that extending our capacity is an absolute must", explains group director Willie de Veer. That is also noticeable at the welding department. The increased amount of work made it necessary to robotise more of the manual welding work. In addition to the 2 existing welding robot cells of Valk Welding, Elmar ordered 3 welding robot cells in quick succession.

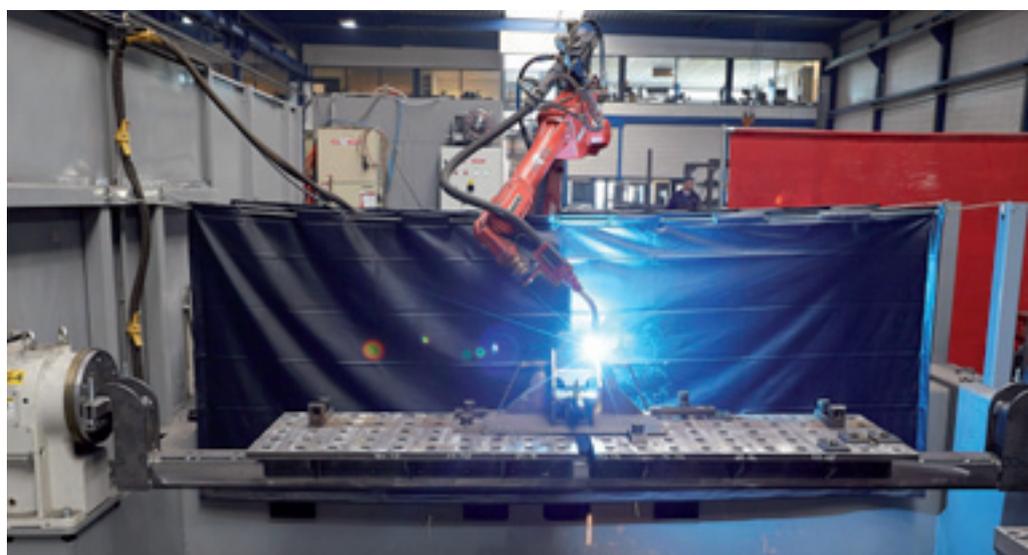
Elmar Metaalbewerking is a division of the Elmar group in Montfoort, a conglomerate of a total of eight metal and wood processing companies, each with its own specific product-market approach. Barosta specialises in stainless steel tank and equipment building, Tebuma in machining and Elmar Metaalbewerking in supplying offshore, machine building, automotive, etc. That makes it possible for the group to serve its customers almost entirely itself. The companies also outsource work to each other for that purpose. The group employs a total of more than 200 people.

## All processing technologies under one roof

The Elmar group therefore has machinery that includes all current production technologies, primarily A-brands. Virtually all of the plating and machining work is carried out by Elmar Metaalbewerking. Up until now some of the welding work on steel had been carried out on an older generation Panasonic welding robot. Willie de Veer: "We weld complex structures by hand, but it is better to use the welding robot for frequently recurring sub-components. This is partly for efficiency reasons, and partly for the high and consistent welding quality. We are also suffering from the shortage of professional welders on the market. That just about makes automation a necessity.

## Welding robots on H and E frame structure

The increasing pressure on the welding robot made capacity expansion inevitable. "The latest generation of welding robots also means getting the latest technology, which means that we are able to take over certified welding work. Following a standard cell with a Panasonic TA-1400WG3 welding robot with a freely-programmable turntable, we quickly purchased a 2nd system on an E-frame structure with a drop-centre and a Panadice 1000-III support bearing. This system can be



used to rotate and weld products up to 4000 mm and even 8000 mm, and we have taken another step forward in capacity and size.

In response to the amount of work another welding robot on an H-frame (H3100) was added at the beginning of this year. This is equipped with a Panasonic TA-1800WG3 welding robot with 2 freely programmable work piece manipulators, suitable for work pieces up to 3.0 m. All of the systems are programmed on the robot itself, but we have now also purchased DTPS and Thick Plate software, which means that we'll soon be able to program offline as well. In combination with DTPS Thick Plate software simplifies the programming of multiple layer welding.

## Training new people ourselves

"At first the welders weren't keen on switching to robot welding, but their interest gradually grew. Instead of welding manually you now programme a welding robot and deliver three times the amount of work. What could be better?", wonders Willie de Veer. The Elmar group is always on the lookout for good craftsmen. "Good craftsmen are

cherished by their employers and stay in their jobs. It's always difficult to find good quality employees", says Willie de Veer. That's why the company also trains new people itself. For that purpose Elmar is also happy to take on vocational education apprentices, who in addition to their 2 days a week at school come and work with us for three days a week and are guided on those days by experienced employees.

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





Harald Bloemers, head of Purchasing Aebi Schmidt The Netherlands:

## "One supplier for complete welding automation"



**Aebi Schmidt, market leader in road de-icing solutions, has taken a major step in automating the production of its salt spreaders by investing in a Valk Welding welding robot system. The Dutch location in Holten took this step after deciding to place the production back under its own management. The new system, which consists of four workstations operated by two welding robots, is configured for**

**a capacity of two to three thousand salt sprayers a year. Valk Welding delivered the entire system on a turnkey basis, including the robot programs for the first products, DTPS offline programming software for maximum programming flexibility, training for the programmers and operators, wire feed systems for both robot systems and Valk Welding's own welding wire for a consistent welding process.**

In one of Aebi Schmidt's large production halls in Holten the 32 metre welding robot system immediately underlines the high-tech nature of the manufacturer of salt spreaders, Schmidt road sweeping machines and multifunctional vehicles. With their streamlined, modern design, their sustainable construction and innovative technology, the salt spreaders are situated at the high end of the market. Up until recently only the assembly took place at the Dutch location, where the salt sprayers are built for the European market, and the welding was outsourced to suppliers. When the company was taken over by the Swiss Aebi in 2008, the new strategy resulted in a drastic change being made to the production and assembly process. Third-parties were used only for the plating components. From then on the assembly and coating were carried out under the company's own management.

### The need for welding automation

The production management in Holten quickly found itself facing a problem owing to the shortage of professional welders. Welding automation was therefore given the highest priority alongside the investment in a powder coating plant. Head of procurement Harald Bloemers: "We approached five parties for this purpose, two of which immediately dropped out because they were unable to meet our requirements. As well as assessing the test welds, the service organisation, the number of installed welding robot systems and the conditions, we focused sharply on what the robot integrators were able to offer in the programming area. It

was also important to click with the new supplier. The demo at Valk Welding went more smoothly than with the other candidate and we immediately had more confidence in Valk Welding's offline programming."

### Welding robots on two 16 m tracks

Valk Welding built a double system consisting of welding robots suspended on a 16 metre track, each of which operated two 7.5 metre work stations. While a complete chassis was welded on one station, the next chassis was clamped on the station next to it. That made it possible to operate the welding robots virtually continuously. The double design created sufficient capacity to complete the annual production in a 1-shift roster. Some 15 to 20 chassis are produced a day during peak season.

### Offline programming

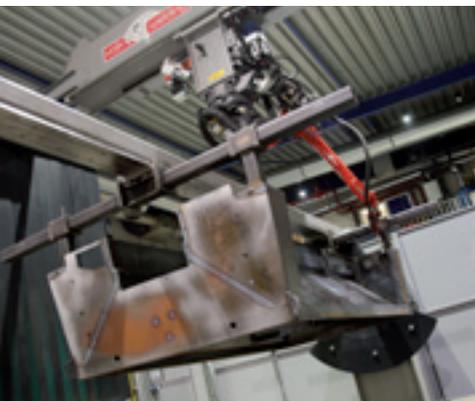
The turnkey delivery included the programming of the largest components, such as the single chassis for the salt spreaders, so that Aebi Schmidt was able to get down to work as soon as the welding robot system was commissioned. Two employees of Aebi Schmidt had already received operator and programming training during the assembly phase at Valk Welding in Alblasterdam. These programmers are now working on the welding programs for the other components the company plans to weld with the welding robots. Harald Bloemers: "The 3D CAD data of the individual components is imported in DTPS, and the components are then placed in the jig, after which the position of the



welding torch, the torch angle and the right welding parameters are programmed. The offline programming software has a short learning curve: the programmers were quickly able to use it. Knowledge is also exchanged with other programmers during the annual users club at Valk Welding. DTPS is a perfect tool because everything can be prepared externally outside of production and every detail can be programmed with great precision. Most of the programmes can be used virtually unchanged directly on the welding robot. We will need to programme a total of between six and seven hundred different program ourselves, and we've now completed about 30% of them."

### No more need for temps

"The double capacity means that we can complete the welding work with



a fixed team of employees without having to take on extra temps. Also, both of the cells have sufficient buffer capacity to absorb any additional growth. Even more importantly, we are now able to achieve a consistent welding quality, which is a big gain compared to manual welding, especially for the larger lengths," explains Harald Bloemers.

### Complete system from one supplier

"Valk Welding has a lot of welding and robot know-how, and a great deal of experience with offline programming. That was the combination that swung it for us. It is also important that Valk Welding supplies a complete system. Since we can obtain everything from a single supplier, including the welding wire, we also have just one point of contact that bears the responsibility."

[www.aebi-schmidt.nl](http://www.aebi-schmidt.nl)



## Klaas Design breathes new life into old robot

Interior architect and product designer Sander Klaas van Veen has a passion for forms and industrial products. He uses discarded objects and materials to make functional works of art. He recently had the opportunity to do something with an old, discarded Panasonic robot. He used it to make a 2.5 m lighting object that immediately gained a prominent position during the recent Rotterdam Art Week.



All of the old welding robots that Valk Welding exchanges under the replacement programme are given a final resting place at the robot churchyard at Valk Welding in Alblasserdam. This is now the site of almost a hundred robots that have served for welding tasks. Because of the outdated technology these no longer fit within the control parameters of the current production systems. But scrapping them is not the first option. Remco Valk: "For reasons to do with Corporate Social Responsibility we had already for some time been looking for a way of sustainably recycling the robots. We were already having the control terminals dismantled by a specialised company to have the electronic components disposed of in an environmentally-friendly manner. We also give the 6-shaft frames a respectful final resting place. The idea of Klaas Design to give robots a 2nd life as industrial objects therefore immediately appealed to us, and is perfectly in keeping with Panasonic's ECO ideas concept."

For Sander Klaas such a graveyard for discarded robots has a completely different value. "I discovered a real treasure trove. Giving those robots a new function creates a completely different designation for them." He came up with a number of striking ideas for turning

the old robots into lamps, parasols, outdoor heaters, benches, etc. Valk Welding immediately embraced the idea and offered all the necessary facilities so that Sander Klaas could get down to work straight away.

He chose a Panasonic AW 8010 welding robot from 1989, one of the first models of the successful AW series. He removed the rust, made sure that three of the six shafts could be manually adjusted and sprayed the AW robot in a single colour. At a scrap yard he found some discarded industrial ITHO fans and used them to make lamps. "The final result is the RO-ITHO # AW8010, a robot that provides a sea of light with 7 lamps and can be adjusted in several positions." Sander Klaas's robot lamp succeeded in attracting the attention of the organisers of Rotterdam Art Week (RAW-ART 2014), which resulted in the robot lamp being given a prominent position at the art fair, together with a number of other objects from Klaas Design.

"The next robot object will be an old heavy-duty handling robot that will be carrying a big parasol. That will ultimately be given a home on the terrace of Valk Welding's new assembly hall."

[www.klaas-design.nl](http://www.klaas-design.nl)

# Welding robot for Schoonhovens College

The business community and Schoonhovens College have for some time been working in close partnership on strengthening professional education for the technology sector. The partnership with regional businesses has raised the level of professional education in leaps and bounds. The school community is now offering education geared entirely to market demand. A new milestone was recently passed with the commissioning of a welding robot at the mechanical engineering department. That makes Schoonhovens College the first educational institute to offer welding robot technology at pre-vocational secondary education level. Valk Welding and supply company Vlot Staal have arranged for a used welding robot system to be installed at Schoonhovens College, complete with welding vapour extraction and the necessary support for the teaching staff.



Schoonhovens College has also obtained a number of academic licences for the offline programming system DTPS so that students can also learn to use the software.

[www.schoonhovenscollege.nl](http://www.schoonhovenscollege.nl) - [www.vlotstaal.nl](http://www.vlotstaal.nl)

## Weld clamping benches for tank, boiler and instrument building



ADK Techniek has recently built a height-adjustable weld clamping bench for a Dutch company that plans to use it to mechanically weld rolled stainless steel tank parts for industrial use. The welding clamp bench is suitable for tank sections with a maximum diameter of 2500 mm and a maximum length of 3500 mm. The steel spike is equipped with a copper underlay that serves as a melting bath support and can be fitted with a welding groove, gas backing and liquid cooling. This minimises all factors such as high-low, irregular through-welding, etc. The copper underlay also ensures a consistent heat discharge so that the

product is deformed as little as possible during and after welding. That greatly reduces the need for subsequent processing of the weld or the complete end-product.

During the welding process the welding torch is moved by means of a servo-driven trolley. This makes the advancement speed variably adjustable and very constant. The quality of the weld is favourably affected and the appearance is nice and consistent.

All of the parameters are set on a touchscreen operating terminal. The terminal is linked to a PLC containing a database in which all of the important parameters can be stored.

As well as being used for stainless steel, the welding clamp bench can also be used to weld horizontal seams in rolled or plate products made of steel, aluminium, copper, etc., in material thicknesses from 1 - 6 mm. The welding clamp bench is suitable for the integration of virtually all industrial welding processes, such as pulse-MIG, TIG, Plasma, etc. The welding clamp benches designed and built by ADK Techniek are indispensable tools at the production workshops of companies operating in the sectors boiler and instrument building, tank building, air channel building, cooling technology, etc.

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

## Trade shows

### Elmia Automation 2014

Jönköping, Sweden  
06-09 May 2014

### MSV

Nitra, Slovakia  
20-23 May 2014

### Vision and Robotics

Veldhoven, the Netherlands  
11-12 June 2014

### Metavak

Hardenberg, the Netherlands  
2-4 Sep. 2014

### MSV

Brno, Czech Republic  
29 Sep. - 3 Oct. 2014

### Internationale Welding Fair

Sosnowiec, Poland  
14-16 okt. 2014

### Verbindingsweek

Gorinchem, the Netherlands  
4-6 Nov. 2014

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