Doing business with

VDL

VDL KTI

We do absolutely everything in-house

We strive to play an active role across a wide range of industries

Welders are the heart of our company

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Simon Jacobs

VDL KTI

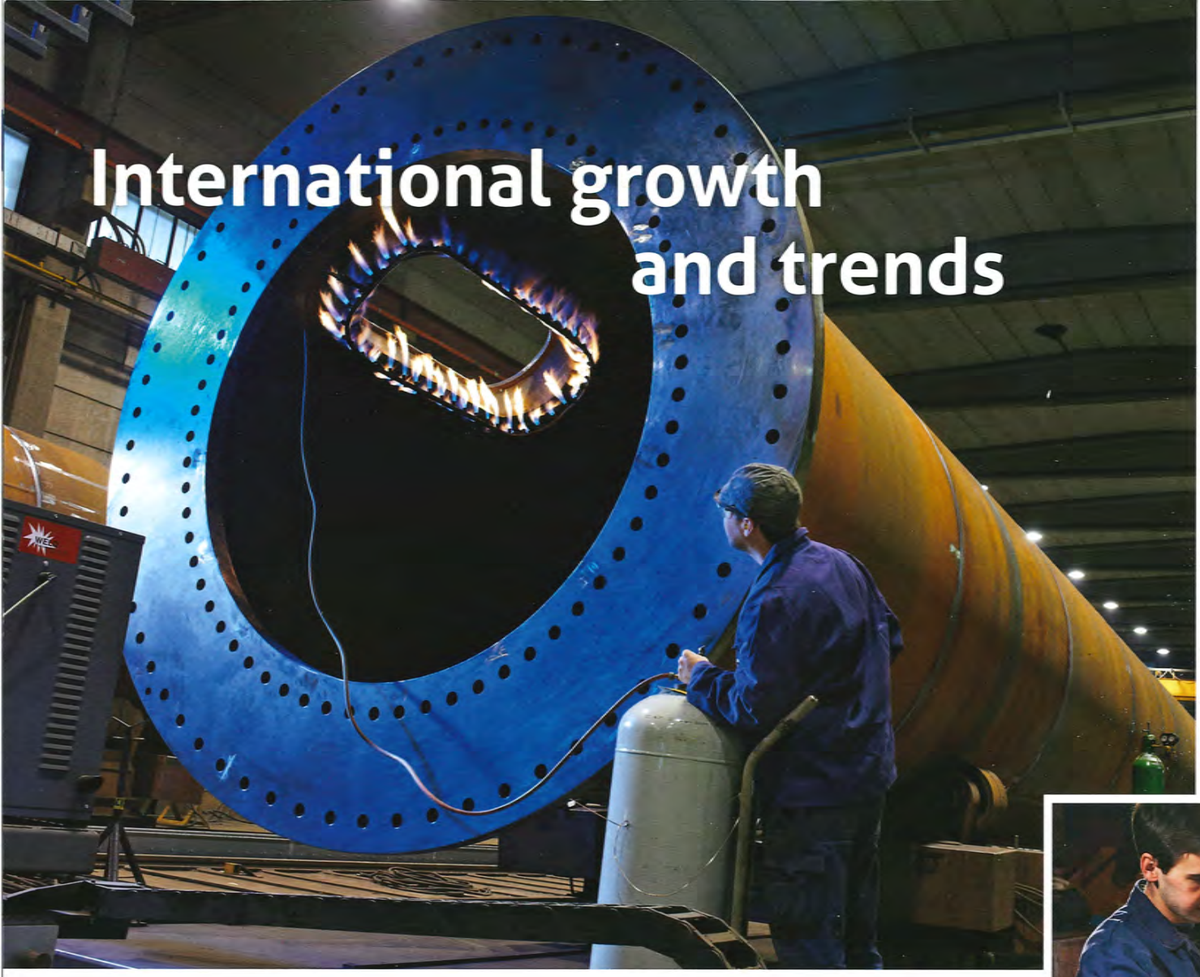
"We strive to play an active role across a wide range of industries"

The success story of VDL KTI began way back in 1971, in the Belgian town of Mol, when it started developing furnaces for the petrochemical industry. Based in the Kempen region of Belgium, the company has built up a strong reputation over the years as a manufacturer of assorted tools and equipment for the oil, gas and petrochemical industry. Products include pressure vessels, reactors, shell and tube heat exchangers, modular skids, etc. Since the takeover by VDL Groep, VDL KTI has invested heavily to improve the production facilities. This has opened new doors for them to other industries, such as the electricity market and the maritime industry. In addition, it has allowed VDL KTI to collaborate with different partners on new developments in waste processing and sustainable energy solutions.

VDL KTI currently has 100 employees at its facilities in Mol and Arendonk. The head office in Mol, in the province of Antwerp, is home to the engineering activities, the administration and the production of heavy industrial equipment. The major focus of the Arendonk site is on the fabrication of lighter products. "We strive to play an active role across a wide range of industries," says Simon Jacobs, Commercial Director at VDL KTI. "This enables us to minimize certain risks. If one industry is in decline, other markets can compensate for it. This is how we attempt to achieve stable growth. We are determined to keep the manufacturing industry here in Belgium and the Netherlands. We believe that local production is absolutely vital." VDL KTI processes around 300 tonnes of metal plates every week, ranging from traditional carbon steel to various high-quality, high-alloyed stainless steels. The steel is purchased from European steel suppliers. Contributing to sustainability of our environment is important to VDL KTI and the company works in full compliance with the ISO 9001, ISO 14001 and ISO 45001 standards.

In 2000, KTI Belgium was acquired by Van Der Leegte Groep, the Dutch family-owned business known as VDL Groep. The group's centre of activity is in the automotive industry, mainly the production of buses and private cars, and employs more than 15,000 staff worldwide. VDL Groep is the European market leader in the electrification of heavy transport. Buses are assembled at VDL Bus in Roeselare, Belgium. Another key activity is car assembly, which takes place at VDL Nedcar where various models of the BMW X1 and the MINI are built. Some VDL products are clearly visible, for example in the case of buses. Mostly, however, they are hidden as semi-finished products or products in the supply chain, which are processed further to make end products. The group has made several interesting acquisitions in recent years, resulting in an impressive worldwide growth to 106 companies across 20 countries including Romania, Switzerland, China and Singapore. Despite this international growth, VDL Groep has remained a true family business, with the third generation currently at the helm.

International growth and trends



VDL KTI has achieved strong growth in recent years thanks to the support of its parent company, VDL Groep, with substantial investments in various areas including the production hall. The acquisition has also in turn helped VDL Groep to enter new markets.

VDL Groep stands for a strong investment culture over the long term. "That's very reassuring," says Simon Jacobs. "VDL has invested heavily in our production hall in Mol over the last 10 years.

"Our growth was made possible thanks to the support of VDL Groep, which invested a lot in our company"

Not only have new buildings been constructed, including several production halls, but also a fully climate-controlled facility for metallisation and for blasting and painting work. New machines were installed, such as new plate rolling machine and flame-cutting benches. Furthermore, the offices in Mol were completely renovated in 2019, with new fittings and furnishings throughout. Because of increased orders, our production capacity was also required to increase. We therefore expanded with a new production facility in Arendonk in 2013 and fitted out the factory completely in just three months, which was essential in order to meet the delivery deadlines."

All these additional investments have allowed VDL KTI to manufacture many new products, such as high-voltage pylons and marine scrubbers. In fact, more than 200 scrubbers a year can be built here. VDL KTI has all the expertise and qualifications it needs in-house. "In 2017, we became qualified to produce pressure vessels with wall thicknesses of over 200 millimetres," says Simon Jacobs. "That's very thick, and an exceptional achievement if you think about it. You have to do a lot of research beforehand. This certification proves that we're qualified to weld the product according to this method." VDL KTI plans to expand into many more new markets in the future. "We export 80 percent of our output. Our goal is to operate in areas that we aren't present yet, and we would like to further strengthen our reputation in Belgium, the Netherlands, France and Germany."

VDL KTI's turnover has seen tremendous growth in the last decade. From 2010 to 2016, annual turnover rose from 12 million euros to between 30 and 40 million euros. "Our growth was made possible thanks to the support of VDL Groep, which invested a lot in our company," Jacobs explains. "This has helped us to have the capacity to take on more projects. Most of our activities were initially concentrated on the oil and gas markets. By cooperating with our sister companies, we have been able to enter new markets and have started developing and manufacturing new products.

The collaboration with VDL KTI has also made it possible for VDL Groep itself to expand. "Thanks to us, VDL Groep has now entered the oil and gas market," explains Jacobs. "At first VDL Groep was active only in the local markets for steel construction welding. We opened the door for them to take on much larger projects in that market."

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William van Hout

VDL Network Supplies

Wintrack pylon: a high-grade, fully coated high-voltage pylon

VDL KTI continuously invests in the development of new products, such as the new high-voltage pylons that reach 60 to 80 metres in the air. 104 Wintrack pylons are currently being built for grid operator TenneT. This follows the 520 masts that have already been manufactured and erected on various Dutch above-ground power line networks.

The Wintrack pylon in Zeeland is a new type of pylon that was developed by TenneT and is already in use at different locations across the Netherlands. The power cables are suspended so that the pylons blend in better with the landscape, giving a calmer view. The pylons are set approximately 350 to 400 metres apart, allowing 50 pylons to cover a distance of around 20 kilometres. These innovative pylons ensure that a narrower magnetic field can be achieved and, thanks to the design, are much more sustainable for people, animals and our environment. "A big advantage is that you can build more densely in urban areas and use less space," says William van Hout, Director of VDL Network Supplies. "It is the best solution for built-up areas where, by definition, space is limited. The pylons require 60 percent less space than traditional lattice towers and are easier to integrate into the landscape. The appearance, the image, and also the technical design are innovative and visually unique."

"Their certified welders work according to the highest quality standards"

William van Hout is extremely satisfied with the work of VDL KTI. "They process metal plates to produce high-grade, fully coated steel pylons. They possess the right skills and their certified welders work according to the highest quality standards. It's a combination of automated welding and manual welding, for the clips and appendages. It is critical that the pylons are manufactured with high quality because they will be exposed to extreme winds and will have to bear the heavy weight of the power lines." The pylons are given the necessary coatings to ensure corrosion-resistance.

Installing the Wintrack pylons is a relatively quick process. "The pylons appear to be one piece, but they actually consist of two, three up to five sections with interior flange connections," says William van Hout. "This allows them to be assembled in a very short time. Installation is much quicker than the traditional lattice towers, which have an open steel construction and can take up to a few weeks to build. Our pylons, on the other hand, can be installed in just a few days." The average service life of the Wintrack pylons is between 40 to 50 years. In 2016, VDL KTI won the Dutch National Steel Award for this high-voltage tower project in the category Industrial Construction.

VDL AEC Maritime

Successful scrubbers

VDL KTI has been building marine scrubbers for supertankers and ferries ever since 2013. A scrubber is placed inside a ship's funnel. The technology reduces sulphur emissions by using seawater to remove SOx particles from exhaust gases.

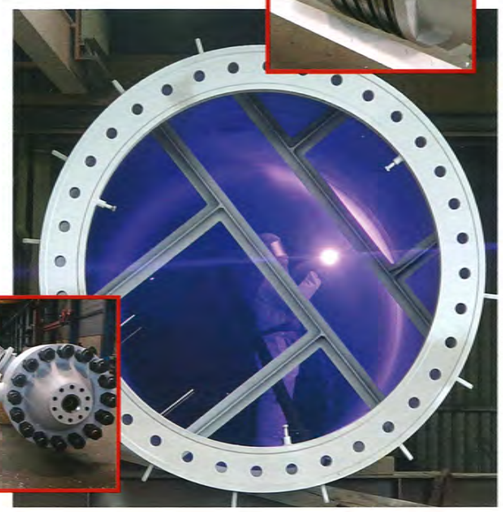
The exhaust gases are treated by spraying them with a mist of seawater. The exhaust gases from the ship's engine pass through the scrubber, starting from the bottom of the scrubber and eventually leaving at the top as clean, white smoke. The water droplets inside the scrubber absorb sulphur, soot and ash particles, and the contaminated water that remains in the system on the ship is then cleaned. The scrubbers mainly filter sulphur particles from the exhaust gases emitted from the ship's engine, resulting in lower air pollution.

VDL KTI delivers the scrubbers to VDL AEC Maritime, which then sells the scrubber systems, including installation and commissioning, to customers in the maritime industry. Joost Wijdeveld, Sales Director at VDL AEC Maritime, is extremely satisfied with the collaboration with VDL KTI. "It is a company with highly skilled employees who are capable of manufacturing scrubbers using high-grade materials and reliable production techniques. The scrubbers are built utilizing a combination of high-quality components, optimal gas diffusion and an equally optimal process. The quality of assembly, as well as the welding, is first-rate." The importance of quality in our scrubbers should not be underestimated. "We use our scrubbers in extreme conditions, such as high exhaust gas temperatures, with salted seawater environment and high acidity levels," says Joost Wijdeveld. "This level of quality is also essential for international shipping, considering that our customers are at sea 24 hours a day, 365 days a year." VDL AEC Maritime has customers in all major maritime countries and regions, including Greece, Japan, China, Singapore, the US, Germany and Scandinavia. "Our customers are very satisfied with our scrubbers, especially if they had experience in the past working with other suppliers who delivered poor-quality products" according to Wijdeveld. "They have seen what kind of problems poor quality causes. Considering value for money, VDL scrubbers are the best choice on the market." Since 1 January 2020, new, stricter emission standards were introduced for the international shipping industry, restricting maximum sulphur emission levels from between 0.1 to 0.5 % range. "The new standard on sulphur emissions, which applies on seas and oceans around the world, is of particular importance to the larger ships with higher fuel consumption, such as cruise ships, oil tankers, bulk carriers and ferries," says Joost Wijdeveld. VDL AEC Maritime has abundant evidence to persuade ship owners to install a scrubber. "A scrubber enables you to prove that your performance exceeds the agreed standards," explains Wijdeveld. "Using a scrubber, you can continue to use heavy fuel oil (HFO) at sea. Research shows that ships with a scrubber emit less CO_2 than those powered by low-sulphur fuel without a scrubber. Low-sulphur fuel does not guarantee lower CO_2 emissions. After all, cracking low-sulphur fuel consumes so much energy that it actually has an significantly negative effect on CO_2 emissions. Moreover, high-sulphur fuel oil is cheaper than the low-sulphur alternative. Low-sulphur fuel oil is thinner and can cause leaks, and is therefore a fire hazard in the engine room."

"A scrubber enables you to prove that your performance exceeds the agreed standards"

Iris

Years of fruitful cooperation between VDL KTI and Iris



Iris and VDL KTI have been working together continuously since 1984 on projects in which Iris takes care of the surface treatments for VDL KTI. It is a very broad collaboration. Iris is involved in the preparation of tenders, procedures and carries out various projects at the VDL KTI plant in Mol and the Iris Installations at Geel. Iris also supports VDL KTI in regulations concerning the environment, environmental audits and audits or inspections of its customers.

Thanks to this fruitful cooperation with VDL KTI and the high quality expectations of its customers, Iris has transformed itself into a specialized partner in anti-corrosion treatments.

More information: www.iris.be

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VDL KTI is a company with whom we have done many of these kind of projects, working as partners to achieve the highest level of safety and quality.

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CLOOS Benelux trustful cooperation for more than 40 years

Robot and welding technology from a single source

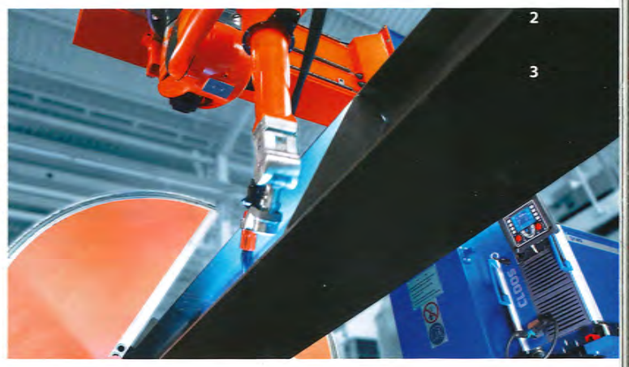
Since 1919, Carl Cloos Schweisstechnik GmbH is one of the leading companies in welding technology. More than 800 employees all over the world realise production solutions in welding and robot technology for industries such as construction machinery, railway technology, energy, agriculture, and the automotive industry.

The CLOOS welding power sources of the QINEO series are available for a multitude of welding processes. With the QIROX robots, positioners and special purpose machines CLOOS develops and manufactures automated welding systems meeting the specific requirements of the customers. From welding technology to robot mechanics and control to positioners, software and sensors, CLOOS supplies everything from a single source.

VDL KTI trusts in welding technologies by CLOOS for more than 40 years. Initially, they started with the MIG/MAG GLC series. When CLOOS released its first pulse welding machine (GLC 403 PAT), KTI was soon convinced of the splash arm welding behaviour that stood for perfect penetration and less post-processing rework. Today, the company uses approximately 65 CLOOS welding machines for MIG/MAG and pulse welding. The welding machines are applied for the production of pylons, special constructions such as scrubbers and heligrids as well as the processing of semi-finished parts or the construction of complete structures.

***Picture 1:** QINEO, are the high-quality welding power sources by CLOOS which have been developed specifically for Commercial and industrial welding purposes. They meet every demand of manual and automated welding. Moreover, the modular QINEO system allows individual solutions which can be adapted to your specific production requirements and objectives. From capacity class to special equipment, each QINEO is customised and supplemented by a comprehensive accessories program and matching services.*

Picture 2: *QIROX comprises all solutions for automated welding and cutting. Due to its modular design, the QIROX system allows scalable solutions which can perfectly match your production requirements. The QIROX system includes the robot technology, positioners, safety technology, software, sensors and the interface to the process technology. It is completed by an extensive range of options and complementary services.*



***Picture 3:** As one of the leading companies in welding technology, CLOOS delivers everything from a single source.*

More information: www.cloos.be

CLOOS

Weld your way.

Iv-Groep

Helicopter Landing Grid

VDL KTI also produces Helicopter Landing Grids, known as HLG's, which are high-tech, niche products. An HLG is a large, round platform measuring nearly 3 metres in diameter that you see on the stern of Navy frigates or supply ships. When at sea, helicopters are able to land quickly and safely by clamping onto the HLG. These specific HLG's were engineered and developed together by VDL KTI and Iv-Groep, a Dutch engineering firm based in Papendrecht. These two companies have established a global and far-reaching cooperative partnership over the past 10 years.

VDL KTI manufactures and delivers HLG's for all types of ships. During the landing procedure, the helicopter shoots a harpoon – a kind of hydraulic clamp suspended underneath the helicopter – into the top plate of the HLG, where it remains fixed. This top plate resembles an inverted honeycomb profile and is completely milled from premium-grade stainless steel. In combination with the harpoon, it ensures that the helicopter is anchored to the stern of the ship. "With our HLG's, a helicopter is always able to land safely on a ship, even under the most extreme weather conditions," says Simon Jacobs of VDL KTI. "Particularly in heavy seas (sea state 6 or higher), it can be challenging for helicopters to land and attach themselves to the ship in one attempt. By anchoring quickly, landing in rough seas becomes much easier and safer. The principle applies for taking off as well. It guarantees a higher degree of safety because the helicopter gains altitude quickly without the need for extra personnel on deck that conventional decoupling requires." Iv-Groep has been supplying HLG's to the Royal Dutch Navy since 2004 and first joined forces with VDL KTI in 2010. "The quality and delivery of the HLG's became much more reliable after we started working with VDL KTI," says Rick de Jong of Iv-Groep. "We no longer have any unforeseen delays and the quality is considerably higher than other engineering factories that we worked with in the past. Another advantage of working with VDL KTI is that the delivery time becomes much shorter. "In the past, delivery would take more than six months, partly because we use a special stainless steel material." says Rick de Jong. "Since working with VDL KTI, the total lead time has been reduced significantly. The fact that VDL KTI has a good working relationship with steel suppliers, is a major factor. An open communication style and technical knowledge of VDL KTI have definitely also helped. Our collaboration has contributed to long-lasting and stable relationships that we build with our customers. We have supplied HLG's to the Belgian and Dutch navies and we also sell and deliver HLGs outside of Europe." Rick de Jong looks back with satisfaction at his many years of working with VDL KTI. "It has always been a pleasure to work with them. We have collaborated on several exciting projects over the years, which has forged a close bond between our two companies. Through innovative design and quality production, you can keep the manufacturing industry closer to home." VDL KTI and Iv-Groep are always seeking new opportunities, and the two companies complement each other perfectly. "We are considering to use HLG's on buildings, such as skyscrapers and hospitals which could be potentially a major market," says Rick de Jong. "Air ambulances aren't always able to land with strong winds. HLG's could then offer the solution for them to land patients safely on hospital roofs under all weather conditions. These civilian helicopters are generally much lighter than military ones, which means we can provide lighter HLG's at a more affordable price. Currently we are also working on developing a super-light version of HLGs for drones and unmanned aircraft."

"We have collaborated on several exciting projects over the years, which has forged a close bond between our two companies"

Welders are the heart of our company

VDL KTI specialises in high-quality welding using premium-grade materials for the chemical, petrochemical, oil and gas industries.

VDL KTI devotes great attention to ensure all welds are properly fused. The end products are often required to withstand extreme weather conditions, for example in Siberia. "We have projects in Chile where there are severe earthquakes nearly every week," says Simon Jacobs. "We supply equipment that operates continuously at 400 bar. Just imagine if the weld cracked – the damage would be immeasurable." Specific components of welding processes at VDL KTI are carried out semi-automatically. The operators monitor the processes closely and make adjustments where necessary. "The welding process on the scrubbers is automated," says Simon Jacobs. "We had to build an assembly line because we needed to produce large quantities in a short period of time. In cooperation with the manufacturer, we produced a custom welding machine that could do the job." The crucial welding processes are still carried out manually by our qualified welders. "We are very proud of our craftsmanship at VDL KTI : welding is an art and we're extremely good at it," says Simon Jacobs.

"Welding is an art and we're extremely good at it"

Welding is performed by the company's team of 60 qualified and skilled welders. "Welders build their qualifications and experience over the years," Simon Jacobs continues. "Every welder must have completed the required tests to be allowed to weld specific materials, such as nickel alloys. We offer guidance and support, and we constantly make sure they receive the necessary training. Welders are the heart of our company and their craftsmanship is always a top priority. We do everything we can to keep them on board for as long as possible." VDL KTI invests a great deal in the welders' working conditions. "There was a time when the welders often had to work on their knees," says Dorus van Leeuwen, Managing Director of VDL KTI. "Now they can operate the welding machine from a chair, using a joystick. This makes it easier for older, highly experienced welders to continue doing their job. We've come a long way in terms of ergonomics and safety." At VDL KTI, a lot has been invested in materials to support its staff.

The company also purchased an annealing furnace to enable low-tensions . "The tension in the thick welds can be very high during the welding process, weakening the section as a whole," explains Dorus van Leeuwen. "If we reheat the metal to a red-hot state at 600-700 degrees, the material becomes soft and the tension is reduced. At VDL KTI, every detail is comprehensively checked to determine whether a weld is properly fused. The welds are scanned with an X-ray machine. "We have two bunkers where we can perform radiographic tests by X-ray," says Dorus van Leeuwen. "We can also examine the thick welds using sound waves (ultrasonic tests). In both cases, we check for lack of fusion or gas bubbles in the welds." The results of the tests are then recorded in a data log that contains all the qualifications, tests and certificates.

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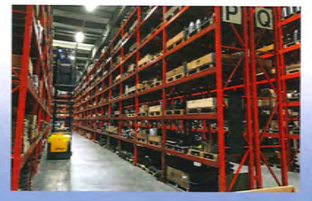

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VDL KTI

We do absolutely everything in-house

Dorus van Leeuwen, Managing Director VDL KTI

VDL KTI is a one-stop shop: it has all the necessary production facilities, from cutting, rolling and machining the base materials to blasting, metallizing and painting for the final treatment. "Everything is done in-house, so that we don't have to depend on other parties."

In 2019, the company invested in a bed-type milling machine to expand the machining department. In that same year, it also installed a new bending machine and a CNC plasma cutting machine. "We now use the very latest machines that are capable of cutting all types of metal plates, including the welding seams," says Dorus van Leeuwen. "We use modern cutting technologies." VDL KTI specialises in plasma cutting. "Thanks to these machines, we can perform plasma cutting underwater with an electric arc," says van Leeuwen. "This is done in water tanks that are 14 metres long. By cutting metal plates underwater, the materials can be cooled down more rapidly. Cooler temperatures mean that the structure of the materials isn't affected as quickly, and therefore the plates deform not as much. The process also causes less noise and dust, which is an added health benefit for the workers."

VDL KTI has four rolling machines that can be used for rolling plates with different thickness. "In the past, we outsourced the rolling work of metal plates," says Dorus van Leeuwen. "But we have taken this task back in recent years. Now we are able to manage difficult products very well and we have developed our expertise in plate rolling. In fact, we can make cones and many other special shapes out of metal plates right here at the plant."

VDL KTI can perform all types of surface treatment, including metallizing or TSA (thermal spray aluminium). "For example, we add a thin layer of aluminium or zinc between the paint and the metal to provide additional protection," says Van Leeuwen. "This is important for systems that require a guaranteed service life of 20 to 30 years." VDL KTI is able to work very quickly and independently. "We don't have to rely on a whole list of other partners," says Dorus van Leeuwen. "This gives us incredible flexibility to execute our orders. We do absolutely everything in-house. The workshop is supported by a large back office team consisting of mechanical and welding engineers, project managers and a very extensive quality assurance and quality control department. A customer often comes to us with a basic design which we then develop further in detail."

Shell Pernis:

A product that ticked all the boxes and was technically perfect

VDL KTI has successfully worked on numerous exciting projects for customers, including Europe's largest refinery, Shell Pernis. The refinery processes crude oil to make usable products such as petrol, kerosene, diesel and raw materials for the chemical industry. One of the projects involved building two convection banks, which have the same function as a heat exchanger.

Convection banks are used in many areas at a refinery. The hot combustion air of a furnace is captured in a convection bank and is then used to heat up the pipes, which helps saving energy. Shell Pernis commissioned VDL KTI to replace two existing old convection banks with new versions. "We scanned the existing installation on site in 3D," Bert Van Riel of VDL KTI explains. "Everything was calculated using the latest software. The next step was to recreate the entire system at our plant in Mol. Temperatures inside the system can reach 400 to 600 degrees Celsius, so we added a fireproof, 150-millimetre concrete lining which limits the thermal radiation to the exterior to 80 degrees." Upon completion, the entire system was transported by boat from Mol to Pernis in one piece. "That was a huge challenge," says Van Riel. "The installation is 7.7 metres long, 4 metres wide, 8 metres high and weighs 60 tonnes. We even encountered a storm on the way of the transportation."

Joris Wondergem

Bert Van Riel

Project leader at Shell Pernis, Joris Wondergem: "VDL KTI measured, plotted and scanned everything on site. They then took the exact same points and used the exact same coordinates in their workshop in Mol. Starting from the connection points, they made sure everything fitted properly. They knew precisely which points needed to be fitted together and therefore did not have to base their work solely on drawings. The new convection bank fitted perfectly on the first attempt on site and also connected securely to numerous furnaces, pipes and other equipment. Replacing the convection bank took place during a turnaround and had to be done quickly. Every minute the factory is not operational costs a lot of money."

There were also technical challenges. "During the design process, the furnace turned out to be heavier than we anticipated and we had to arrange for a bigger crane to put the bank in position," says Wondergem. "The design process and the detailed engineering challenged our team to come up with ingenious solutions, considering the existing drawings were outdated and some of the designs and standards had changed over time. Thanks to the intensive collaboration between the engineering contractor Worley, Shell and VDL KTI, we were able to create a product that ticked all the boxes and was technically perfect. The team had to pay extra attention to the step-by-step plan in order to flawlessly build this convection bank, which includes the whole pipe system, the connecting pipes in between and the refractory concrete."

"The cooperation and communication with VDL KTI was very smooth"

The cooperation and communication with VDL KTI was very smooth. "We can see that this is a close-knit team who know each other well," says Joris Wondergem. "They act quickly when faced with challenges and the lines of communication are very short. We will definitely contact them again for future contracts."

Agoria

It is important for the staff to possess the necessary skills and competences

The market for the steel industry has experienced radical changes in recent years, a trend that hasn't escaped the attention of technology federation Agoria, a Belgian employers' organisation for the sector.

Agoria offers direction for all technologically inspired companies in Belgium that aim to enhance our quality of life by developing and applying technological innovations.

"We see that VDL KTI trains and deploys real professionals"

More than 1900 Belgian technology companies are affiliated with Agoria and are predominantly active in the manufacturing industry, the digital sector and the telecom sector. The team at Agoria are noticing many evolutions in the steel industry. "When I joined Agoria 13 years ago, Belgium was home to a large number of metal manufacturers," explains Pieter-Jan Provoost, Business Development Manager at Agoria. "We initially believed that such complex steel techniques couldn't be copied. But we did notice that there was increasing competition from countries in the Orient. A lot of the energy giants now have their steel produced in Asian countries. Many of VDL KTI's peers moved their operations and services to the Far East, for example to China, Vietnam, Malaysia and India. The reasons to do that are various, such as the globalisation of the supply chain, the trend to outsource tasks and cost savings. Many of those companies have since vanished from the market simply because they could no longer survive commercially."

Pieter-Jan Provoost

Agoria saw an evolution happening in the Middle East. "There was a flourishing period with several multi-billion-euro projects," says Pieter-Jan Provoost. "At first they bought from us because of the good quality of our products. But then they started outsourcing to Asian countries all together. We still hear stories about quality issues in the Far East, which is still well under par. You buy at a cheaper rate, but then encounter faults in the construction and the welds. It's a shame that the pressure of financial results means that companies no longer look at the Total Cost of Ownership (TCO) and therefore go for the cheaper option."

Agoria finds it remarkable that VDL KTI has been able to hold its ground during this period of evolution. "I am delighted that VDL KTI has been able to overcome all these international changes and still stands strong," says Pieter-Jan Provoost. "They have managed to keep their operation here in Belgium by continuous effort to keep costs down. They concentrate on digitization, as well as on new welding and cutting technology. There is a strong focus on training and educating their staff. It is important for the staff to possess the necessary skills and competences. We see that VDL KTI trains and deploys real professionals and utilises the knowledge we have in Belgium in the field of steel construction."

VDL KTI is continuously on the lookout for new niche markets. "They have often stepped out of their comfort zone," says Pieter-Jan Provoost. "They have managed to enter the maritime market, for example, with the construction of scrubbers. Stricter environmental regulation set by the International Maritime Organization requires that exhaust gases have to be cleaner. VDL KTI has responded to that demand. They understand the technology and processes to manufacture the best-quality scrubbers which reduce exhaust gas emissions on ships. They bridge the gap between steel as a product and knowledge of the application."
Pierre Martens, Business Group Leader at Agoria, is impressed by the transformation that VDL KTI has achieved. "They have dedicated their efforts to new products in the energy sector, such as high-voltage pylons and scrubbers. The products they fabricate definitely have potential for the future, for instance the CO_2 absorption columns for carbon capture and storage (CCS) applications."

According to Herman Looghe, Building Contracting and Technical Services at Agoria, VDL KTI has found a niche market with products like the scrubbers. "They move along with the trend towards decarbonisation. Their high-voltage pylons respond to this trend, which is beneficial to the environment. They build complex structures that require intricate engineering skills. They also train the welders; a very important matter considering the current labour shortage in that area. VDL KTI produces locally. If the coronavirus crisis has made anything clear, it is that local production is important, if not essential. Globalisation does have its limits."

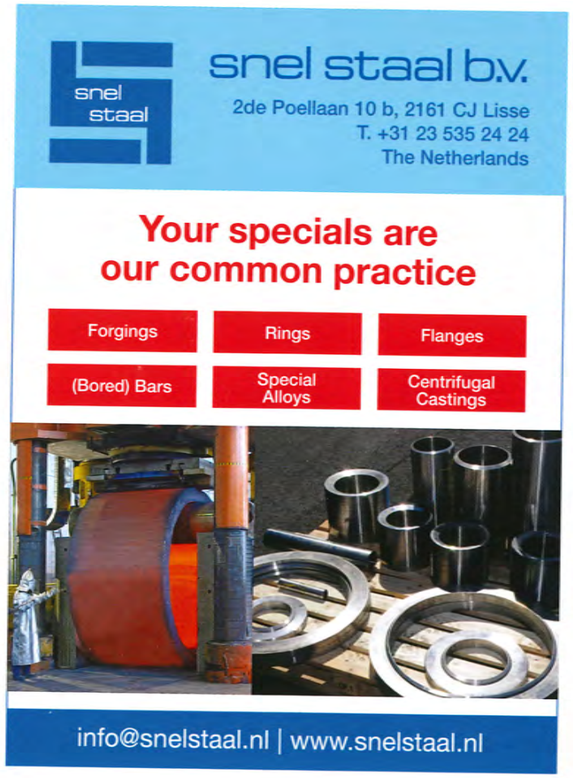
Agoria has also noticed that more and more companies are incorporating their maintenance processes into their operational processes. "It is seen as a combined whole," says Pieter-Jan Provoost. "Every step is increasingly monitored by sensors. After all, you can still keep maintenance costs down without opting directly for the cheapest solution.

Herman Looghe

Pierre Martens

"They are moving along with the trend towards decarbonisation"

And that's good news for VDL KTI. It allows the company to once again expand and strengthen the local manufacturing industry." Pieter-Jan Provoost sees new, exciting challenges in the hydrogen market. "In order to store and handle hydrogen, you need the right coating and type of steel, because hydrogen is highly explosive and corrosive. Safety standards are currently being drafted to this end. I'm certain there are also opportunities for VDL KTI in this market."



BIL

There is a huge market out there that is still open

At the Belgian Welding Institute (BIL: Belgisch Instituut voor Lastechniek), they find that VDL KTI has a strong focus on training its staff. VDL KTI has succeeded in penetrating new markets and niches. This is the opinion of Bart Verstraeten (Technical Director) and Wim Verlinde (Welding Consultant) of BIL.

The Belgian Welding Institute (BIL) is an independent research and knowledge centre in the area of welding, related technical processes and the weldability of materials. Specialist fields of BIL are damage analysis and the mechanical testing of materials, at which its knowledge and experience of welding are often relevant for three-dimensionally produced projects. BIL is very positive about the human resources policy of VDL KTI. "They invest sufficiently in training their employees," says Bart Verstraeten. "They take good care of their staff and treat them with care. The company continues to invest in their staff and in their senior welders, which is a positive note worth mentioning. They invest in not only welders but also welding coordinators. Many welding engineers have been recruited in this way recently." Wim Verlinde agrees. "VDL KTI clearly recognizes a welder's professionalism. They offer plenty of training opportunities. Many other companies in the same sector are less committed to training. Being a good welder is an art, particularly when it comes to complex structures and more challenging materials that require strict compliance to standards in every detail. If the welders have learned the discipline and have the skills, there is less reason to switch to automated welding, especially for smaller series or the production of one-off items." BIL acknowledges that many companies are replacing their welders with robots – often out of necessity. "Many companies switch to automated or mechanised welding systems simply

because they don't have qualified and skilled welders to do the job manually," says Wim Verlinde. "They simply can't find any staff. But if you treat your staff well, you can retain them. At the same time, we're seeing a lower threshold towards automation. It is much quicker and easier these days to program welding robots. Sensors and a camera allow you to monitor and adjust the welding process. As far as simpler applications and large quantities are concerned, automated welding certainly has its advantages."

"VDL KTI clearly recognizes a welder's professionalism"

BIL believes that VDL KTI has been quick to seize new markets. "VDL KTI has a solid structure and a lot of know-how, which make it easier to persuade customers," says Wim Verlinde. "They can tackle all kinds of welding processes. It was a smart move to diversify their products beyond the petrochemical market." Bart Verstraeten sees a few key trends for the future. "Hydrogen storage will become more important in the years to come. There's a huge market out there for the taking, for instance concerning the effects of hydrogen on steel. High-quality projects with co-engineering are growing in importance, with the interaction between engineering and manufacturing playing a much greater role. There is a large market there." BIL also spots another trend. Previously the standard was to use 'over-dimensioned' materials, which is far less common these days and also has consequences for welding. "In the past, clients would opt for extra-heavy materials just to be on the safe side," says Wim Verlinde. "We're seeing a lot less of that today. Everything is calculated more precisely, while the conditions of use are getting more extreme. Structures in the offshore industry are subjected to a corrosive environment while also being exposed to severe dynamic loads and tensions, such as waves and gale-force winds. This means they are more susceptible to fatigue. For this reason, more precise checks are carried out and a better quality of welding has to be guaranteed. It all requires additional efforts and a sound knowledge of welding."

Wim Verlinde

Bart Verstraeten

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