



EXPECT
STORIES FROM THE AVK
WORLD

Expect... **AVK**



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Frontpage picture

AVK gate valves installed at the Hafei water plant in Wangdunying Village in the Luyang District, China. The old plant has been using AVK valves since 2001, and due to stable operation AVK products are also chosen for the new plant.

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DEAR READER

The flow of water through society is considered as critical infrastructure. And rightly so. We need to maintain a functional water infrastructure to keep our society from collapsing. As long as water flows from the tap, no one pays water supply a second thought, and as long as the water washes through the drain from the wash basin or the shower, no one even considers the fact that wastewater handling is a necessity, at least not in the Western world. The situation is different in other parts of the world, where they have inadequate water supply and no proper sanitation. The fact is that 2,1 billion people do not have a steady water supply in their homes, and by the year 2025, 1.9 billion people are expected to live with an absolute shortage of water. The water loss in the distribution grid ranges from 5-80% – in Europe alone, the average water loss is 26%. At the other end, 80% of all humanly induced wastewater is led directly

into nature without cleansing of any kind which in turn causes massive pollution and disease. If the world could get the water situation under control, the savings of the healthcare system would amount to 25%. In addition, the International Energy Agency has calculated that untreated wastewater emits more than three times the amount of CO₂ than wastewater that has been treated and cleansed. If the sub-goal 6.3 of the UN Sustainable Development Goal no. 6 has to be realised; i.e. if half the currently untreated wastewater is collected and treated, and if resources are used for energy production, it would correspond to the production from all coal-fired power plants in Europe, meaning that they could be closed down, in turn leading to a massive CO₂ reduction.

The common denominator of a sustainable water infrastructure is investments in products with

a long lifespan and a high level of functionality. The water supply companies must prioritise the total cost of ownership higher than they do now. Recently, we learned of a water treatment plant that after four years in operation is not working anymore, because only price was an issue at the tender process. How is that sustainable?

In this issue of InterLink, you can read about projects where AVK has played a part and where functionality and a long lifespan have been key elements. You can also read about the importance of quick response times as well as other good stories from the world of AVK.

Enjoy reading.

Michael Ramlau-Hansen



ADVANTAGES OF PRESSURE MANAGEMENT IN THE SUPPLY NETWORK

DENMARK

Controlling and regulating the pressure in the water supply network can provide savings on resources as well as reduce the level of non-revenue water.

**22 hours
with too high
pressure?**



*By Martin Børsting,
Product Manager, Control valves,
AVK International A/S*

Pressure management is considered the single most beneficial and cost-effective leakage management activity. Most pipe bursts occur not only because of high pressure, but rather due to ongoing pressure fluctuations forcing the pipes to continuously expand and contract, resulting in stress fractures. There is a physical relationship between leakage flow rate and pressure. The higher or lower the pressure, the higher or lower the leakage rate. Thus, the pressure should be kept at a minimum without affecting the consumers' needs.

Water utilities measure their quality, among other things, by whether there is sufficient pressure at the consumer's taps. Therefore, utilities are often using a constant inlet pressure to the individual zones/districts in order to ensure that consumers have sufficient pressure at all times of the day.

Pressure level at the consumers

The pressure at the consumers depends on the friction in the supply line. To compensate for the friction, the inlet pressure is typically higher than the required minimum pressure. However, the friction depends on the flow rate and therefore, it varies according to the consumption. A constant inlet pressure means that the pressure at the consumers varies during the day. This means that the pressure at the consumers will be highest at those times where they need the water the least – and lowest when they use a lot of water – e.g. in the morning and in the evening.

22 hours with too high pressure?

To ensure that the consumer never experiences too low pressure, the inlet pressure is usually set based on peaks in consumption.

A typical consumption pattern for the water supply shows that consumption is high for only a short time during the day. Of course, there may be exceptions – as if, for example, there is water-consuming industry in the

area – but usually, there will be no more than two hours a day with high consumption.

Therefore, a constant inlet pressure results in a pressure that is higher than necessary for 22 hours a day. A high pressure has a huge impact on the distribution network. This applies to the overall service life of the components and to the number of fractures and pipe bursts.

A lower pressure reduces pipe bursts and leakage – and thus also non-revenue water.

There is a direct correlation between pressure and the number of pipe bursts. An international study has shown that a 37% reduction of the average pressure leads to a 51% reduction of the number of pipe bursts.

In addition, high pressure also leads to increased water loss through leakages. This is because leakage from holes in the pipeline highly depends on pressure. If, for example, there is a 5 mm hole at a pressure of 5 bar, it will result in a water loss of 11,520

m³ per year. If, on the other hand, the pressure is lowered to 4 bar, the annual water loss will be reduced by 11%, corresponding to 1,267 m³. The water loss also represents an increased energy consumption. Converted to kWh, this corresponds to approx. 267 kWh saved per 5 mm hole in the pipeline (based on the consumption of a Grundfos CR32-4 at 5 bar).

Effective pressure management based on time or flow

As explained, it makes sense to reduce the pressure in the distribution network. This can easily be done without compromising on quality. By lowering the inlet pressure during periods with low consumption, an acceptable minimum pressure is

maintained at the consumers, while interruptions and inconvenience from pipe bursts and fractures are reduced. Also, the consumers will, in general, experience a more stable pressure throughout the day.

Installing a control valve at the inlet to a district or zone can help achieve a very efficient control of the pressure based on time or flow.

Time-based pressure management

Time-based pressure management allows the pressure in the district/ zone to be adjusted based on set points. This way, the valve can lower the pressure during periods with expected low consumption and raise it again when consumption increases.

Thus, the average pressure can be significantly reduced.

Flow-based pressure management

From the consumer's perspective, flow-based pressure management is a better way of regulating pressure. The regulation uses the signal from a flow meter to adjust the outlet pressure of the control valve according to the current consumption. This will reduce the average pressure, and the pressure at the consumers will be more stable. Such a regulation takes the changes in consumption that falls outside the normal range into account, such as holiday periods, water consumption via fire hydrants and other abnormal consumption patterns.

AVK HYDRANTS DECORATE THE FIRST SMART STREET



*By Felix Gyori,
Product and Promotion Manager,
AVK International A/S – Romania*

The first smart street in Romania was built by the Cluj-Napoca City Hall with European funding. It has all the facilities of a modern, green public area adapted to the current technological realities and urban mobility.

The street was built during the summer of 2020, and we are proud about

the presence of AVK P7 hydrants. Additionally, the street is equipped with: sensor irrigation systems, a modern pedestrian area, places for charging electric cars, bicycles and scooters, free Wi-Fi, USB sockets for mobile devices, energy efficient street lighting, water fountains and modern street furniture.

The P7 hydrants installed in the area have several safety features and comply or exceed the requirements of standard DIN EN 14384. The hydrant

is designed with a double closing system for continuous sealing during maintenance operations or in case of accidental hits. The sealing element is covered with a very resistant material based on polyurethane approved for drinking water.

The AVK P7 hydrants contribute through quality and design to this modern landscape. They were installed by Compania de Apă Someș S.A., the regional operator for Cluj, Salaj and Mures counties, one of the largest and most important public utility companies in Romania that services a population of approximately 800,000 people.

The hydrants were delivered by our partner Vestra Industry, an AVK authorized distributor based on a procurement contract organised by the water utility which extends for a period of three years and includes over 500 underground hydrants and 500 above-ground hydrants.

FONS VITAE – A TRIBUTE TO WATER AS A VITAL RESOURCE

DENMARK

One of the first things you see when you arrive at AVK on Bizonvej in Denmark is the giant jar that stands outside the building. This jar is not just an ordinary jar, but it stands there as a tribute to life itself, to water and to the way water impacts and nourishes our lives every single day.

*By Anne Sørensen,
Communication & Learning
Coordinator,
AVK Holding A/S*

The 5.4 meter tall and 9 tonnes heavy ceramic artwork is called Fons Vitae – the fountain of life – and is created by Peter Brandes, a Danish painter, graphic artist, sculptor and photographer. AVK's CEO and founder, Niels Aage Kjær, has a deep passion for art, which is also very apparent when walking around the AVK premises in Denmark. Peter Brandes has a special place in Kjær's artistic heart and was therefore also a natural choice when considering a comprehensive piece such as the jar.

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References to AVK's history and development

You might not be able to see it at a distance, but when you get close to the jar, you will easily see that it is decorated with various elements and symbols that all bring the attention to water. In addition, you can also see references to AVK's history, development and products – such as street covers, fire hydrants and most importantly, the first blue valve from 1970 that kicked off a terrific chapter in AVK's history and became the basis for further development of valves and other products for water, wastewater, gas, fire protection and a number of industries.

In this way, the jar honours the creativity and innovation that has built the foundation for the solutions that AVK is able to present today as well as the constant development and adaption that contributes to improving efficiency, water safety and accessibility for people all over the planet. At the same time, the jar

works as a tribute to the many years of product development and manufacture that has taken place at AVK premises – not just here, but all over the world.

A strong statement of dedication to life-changing water management

Not only is Fons Vitae a tribute to water as a vital resource, but it is also a strong statement of dedication to life-changing water management and a commitment to keep improving our solutions and our products to help ensure safe and accessible water to people all over the world.

Through constant innovation of products and solutions and continuous dedication from our employees all over the world, AVK is placing water safety and accessibility at the top of the agenda. Therefore, it is also not a coincidence that Fons Vitae is one of the first things you see when you arrive at AVK in Galten, Denmark. Fons Vitae acts as a statement, and we want all our customers and visitors to see that

AVK is dedicated to securing water as a vital resource.

Celebrating AVK's 80th anniversary

Next year, the AVK Group and its devoted employees can celebrate 80 years of solid contribution to the water industry. By then, a similar jar will be raised at the AVK offices in Galten, Denmark, right where the AVK journey began back in 1941. This jar will be created with focus on AVK's history and the eventful development in the whole AVK Group.

WATER – OUR MOST IMPORTANT RESOURCE

GLOBAL

Water shortage is a challenge that impacts more than 40% of the world's population. Access to clean drinking water and proper sanitation services is not a given. Today, around 2.2 billion people do not have access to safe and clean drinking water while 4.2 billion – half of the world's population – do not have access to safe sanitation services. Besides water scarcity and health challenges, there are also environmental and economic challenges regarding water supply and water network.

*By Ida Kirstine Rohde Mikkelsen,
Marketing Coordinator,
AVK Smart Water A/S*

Therefore, it is important to build a strong and effective water infrastructure to face these challenges. Using technology and innovative solutions will help water companies use the knowledge they have right under their noses while managing the distribution network.

Digitalisation of the water sector

Lasting solutions for challenges in the water supply have emerged from the technological development. With integrated digital solutions as

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a tool, the water industry is working towards accommodating the UN's 17 Sustainable Development Goals and the EU Drinking Water Directive.

AVK Smart Water has developed a monitoring concept that will help water utilities obtain a greater understanding of what is going on in their distribution network by integrating intelligent and digital sensors on key components. The solution will increase efficiency, reduce Non-Revenue Water (NRW) and manage risks related to the water distribution.

By being directly connected to key components in the distribution network, utilities can monitor the system and point out areas where extra attention is needed. With specific areas pointed out, an effective effort can be conducted, which will help reduce water loss, unnecessary energy consumption, and at the same time enable utilities to evaluate risks regarding the condition of the distribution network.

Innovative and effective solution

The overall AVK Smart Water solution monitors the current status of the network and registers changes in the hydraulic set-up. It delivers the necessary data to effectively control pressure in the entire water system, which results in a lower energy consumption for pumps, fewer burst repairs and generally a longer lasting infrastructure.

Risk management and assessment is important to minimise leaks or bursts and to reduce maintenance and asset management costs. A complete overview means that utilities are constantly up to date on the status of the network and can perform risk assessments on an ongoing basis. That way, the utility can act whenever there is an alarm for irregular pressure, flow or temperature, and whenever there is an irregular opened or closed component such as a gate valve.

AVK sees great potential in expanding the current product portfolio to include intelligent solutions, which is exactly what AVK Smart Water delivers. A solution that creates a more sustainable, economic and data-driven future for the water industry.

Dedicated showroom for AVK Smart Water portfolio

In relation to the new smart products, AVK Smart Water has set up a dedicated showroom to demonstrate the solution and the functionality of the VIDI devices. The showroom located at the headquarter in Denmark holds different installations with VIDI devices on AVK core products such as gate valves, hydrants and in a full-size District Metered Area well.

In addition, there are screens to show the real-time data being sent to the VIDI platform. Here, you can see how a VIDI Cap sends a signal, when the cap is removed from the hydrant, and that the VIDI Positioner sends a status of the valve's position.



AVK CHINA HOST SMART EXPERIENCE AT IE EXPO CHINA 2020

CHINA

As the leading platform for environmental technologies in Asia, the 21th IE Expo China was successfully held in Shanghai on August 13-15, 2020.

*By Ken Yan,
BD & Marketing Director,
AVK Valves (Shanghai) Co., Ltd.*

Despite the organiser's uncertainties up until the event, it was clear that the entire industry was eager to revive business and networking following the pandemic crisis in China and the rest of the world. More than 73,000 visitors travelled to Shanghai to learn about products and solutions from 1,851 companies as well as market prospects. An event with a complete show space of 150,000 m³.

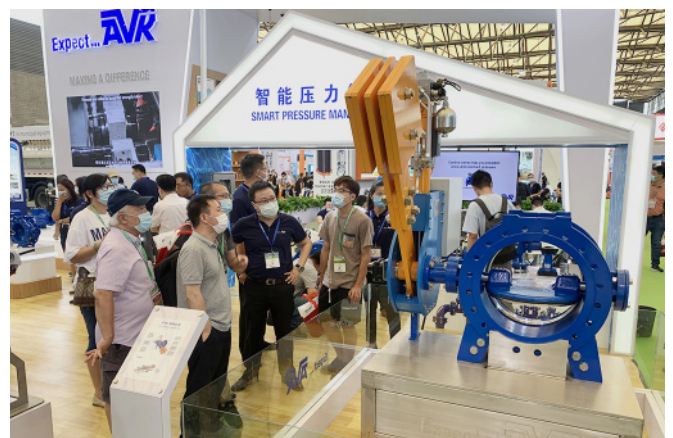
AVK China on spot with a smart solution experience

AVK China's booth was designed as a giant ship on a voyage carrying our latest products and solutions, expressing AVK's capabilities within high quality and IoT. The booth attracted a lot of attention at the Valve Pavilion and was a popular sight for visitors.

AVK established a smart pressure management area for on-site experience, enabling visitors to try operating the devices through mobile apps and web. The experience included IoT devices installed on plunger valves, air valves and control valves.

Butterfly valve debut – now with servo motor option

The hydraulic operated butterfly valves from AVK Anhui are widely used in all kinds of pump stations and long-distance pipeline projects. It is the ideal equipment to ensure the safety and reliability of the pipe network system. For this year's Expo, AVK China presented an upgraded version with servo motor option. In the process of product development,



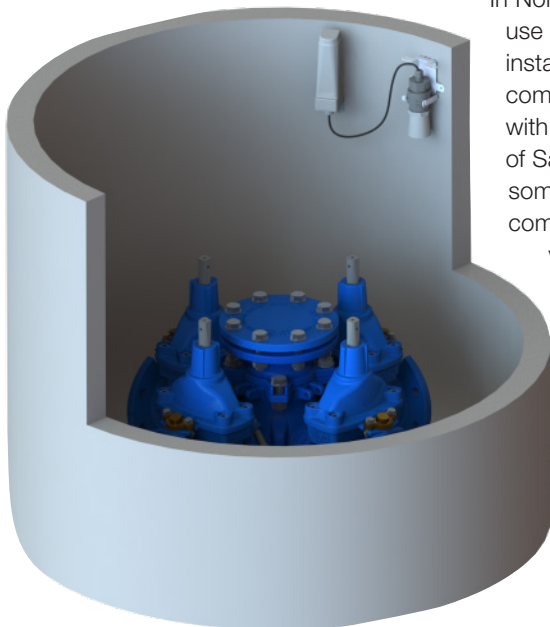
AVK Anhui has worked closely with AVK Shanghai for full understanding of the technical requirements of Chinese customers. The product was recently launched and has assured AVK China a good position in its market segment.

Staying on top of the market's needs

Meanwhile, employees from different departments at the AVK Anhui factory visited this exhibition as well to learn about new products and technologies in the Chinese market. We know that demands come from constant market insight. AVK meets an ever-changing world with global leadership and local commitment and keep pushing the boundaries of what our market can expect.

NEW PRODUCT DEVELOPMENT IN AVK SMART WATER

GLOBAL



In Norway, it is very common to use underground chambers for installation of gate valves and combi-crosses. In cooperation with AVK Norway, the Municipality of Sandefjord have equipped some of their underground combi-cross chambers with valve position indicators and temperature and pressure transmitters. This gives the utility unprecedented insight to the conditions of its water distribution network that can support their decision-making and increase their efficiency.

The installation is made based on VIDI transmitters from AVK Smart Water. The VIDI transmitter is a battery operated IoT device that can measure various parameters such as temperature, pressure and flow – depending on the sensor element connected.

Addressing flooding challenges

In dialogue with the Municipality of Sandefjord and AVK Norway, it was clear that the utilities in Norway have a general challenge in monitoring flooding in chambers – in some cases with water, and in other types of pits, with sand. It is important for the utility to know if the chamber is flooded as the risk of intrusion and deterioration can occur. Therefore, utilities spend a large amount of time and resources inspecting the chambers.

As part of the adaption to the Norwegian portfolio, it was decided to develop a solution to solve this challenge.

Based on the existing transmitter concept, a new solution is being developed that can monitor the water level inside e.g. chambers. The new solution is an ultrasonic sensor that can be placed in the sealing or on the wall of the chamber. The sensor measures the distance to the nearest surface below every 5 minutes and transmits the measurements every 30 minutes via the built-in LoRa-radio.

Even though it is designed for chamber installation in Norway, the simple design, IP68 rating and 10-year battery life makes it relevant for several different applications such as monitoring surface water level or wastewater level.

*By Ida Kirstine Rohde Mikkelsen,
Marketing Coordinator,
AVK Smart Water A/S*

The AVK Smart Water portfolio of smart products is currently being implemented in selected markets all over the world. During this process, the focus is on adapting the offering to specific needs in each market. In dialogue with local representatives and customers, the challenges and possibilities are discussed, and adaptations and sometimes even new products are added to the product roadmap.



Currently, the product is a prototype, but it will be released in selected markets from January 2021.

DEMAND-DRIVEN SUPPLY AND OPTIMUM WORK CONDITIONS THROUGH AUTOMATION

DENMARK



At Kasted water works outside of Aarhus, Denmark, a new facility has been established with the purpose of securing a future-safe water supply for the area.

*By Katrine Klejnstrup Sørensen,
Marketing & Communications,
AVK Holding A/S*

The idea behind the facility is to reach a water supply that is tailored to fit the actual real-time demand, improve the staff's work conditions and obtain the safest drinking water possible.

The facility holds six XL PE pipe water tanks with a total capacity of 2,000 m³. It replaces a previous installation with a single water tank made from concrete. Working with only one tank is risky, as maintenance or contamination could mean a temporary disruption

of the supply to customers. Further, constructions made from concrete crack over time, and damages are difficult to detect.

Plastic materials, such as PE, on the other hand are able to bend, and are cheaper in production, which was a further advantage while wanting to build six separate tanks.

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Keeping it natural

In Denmark, the permitted drinking water treatment only includes oxygenation and filtering, where adding chlorine is common in almost all other parts of the world. This only emphasises the need for a system where the risk of water contamination is brought to an absolute minimum.

Having multiple tanks creates more flexibility, as maintenance or cleaning can be undergone without any interruption of the essential supply. Also, it is preferred to have as little stagnant water as possible, but to keep the water's journey from ground to consumer as short as possible.

Full focus on high water quality

The water works produce more than 250 m³/hour all day from water drillings nearby, which is then filtered and

oxygenated before it is sent off to the water tanks. The main purpose of the tanks is then to store enough water to assure a continuous supply and, while doing so, keep out any contaminating dirt or bacteria from the surrounding soil. Therefore, the tanks have an extra layer added on the outside, and the gap between the inner and outer layer is filled with pressurised air. This makes it possible to monitor any changes in the pressure, which would indicate a leak or burst somewhere in or around the tank.

Air over the water surface in the tanks enters and exits through an air filtration system to prevent contamination from the inlet air. Relief and vacuum valves are installed on top of the tanks to secure the tanks from damage caused by sudden changes in air pressure. A small tap is placed on each tank for regular water quality sampling. The tanks decline slightly towards the inside of the facility, resulting in a self-cleaning feature directing any small particles to a sump pump at the end, where they settle and can be discarded.

Harvesting the benefits of automation

Adding more control to the facility equipment is the main driver in reaching the goal of a demand-based supply. Before, outswings in demand were tackled through overcapacity,



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which will no longer be necessary as the facility will be able to respond to peak or off-peak hours, keeping the resources used at a minimum.

Being able to remotely monitor and regulate changes in the facility comes with other advantages. With the finalised setup, no staff will have to rush in at changes but can follow up and adjust equipment settings from where they are situated. This saves valuable time and efforts, benefitting both staff and end-consumers.

The facility has been equipped with two large DN400 AVK gate valves at the inlet from the pumping station, and smaller DN200 AVK gate valves and butterfly valves with actuation for both inlet and outlet of each of the six tanks.

Upcoming project with similar setup

By now, five tanks have been checked off and are taken in use. One out of three pumps are activated and is currently sending 60 m³/hour on its

way to the thousands of consumers in the area. The complete facility is expected to be up and running within the year.

Next up will be a similar facility in the centre of Aarhus city, where water will be delivered by the pumps here in Kasted.

The projects are carried out by Aarhus Vand A/S.

AVK AROUND THE WORLD

INSTALLATION IN PROGRESS CLOSE TO THE AVK PLASTICS OFFICE

*By Jelle de Jong,
Technical Sales Coordinator,
AVK Plastics BV*

Installation of AVK gate valve in the town centre of beautiful Balk, close to the offices of AVK Plastics.

Picture taken by Esther van Duyn



AVK WATECOM AND FUSION GROUP CHOSEN AS KEY SUPPLIERS TO ABU DHABI GAS NETWORK



Over 46 years, Abu Dhabi National Oil Company (ADNOC) has played a fundamental role in the economic development of Abu Dhabi. ADNOC's 2030 strategy is to transform the way they maximise value from every barrel, to deliver the greatest possible return to the Emirates of Abu Dhabi, and in turn help meet the world's growing demand for energy.

*By Anurima Roy,
Marketing Manager,
AVK Watecom*

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In January 2019, ADNOC undertook the development of the City Gas Network Project's phase 2 in the main areas of Abu Dhabi. An extensive project that is estimated to be as much as US\$ 80m; contracted value US\$ 60m.

The project aims to lay a 68 km long natural gas distribution pipeline network (4 bar) in the emirate of Abu Dhabi, and includes the installation of fibre optics, cathodic protection works, a SCADA system and associated facilities with mechanical and civil works. The main idea is to do away with the existing liquid petroleum gas and compressed natural gas cylinders in the city after the completion of the natural gas distribution.

Phase 2 initiated

The Petroleum Projects and Technical Consultations Co. (PETROJET) won the contract in 2019. The project is due for completion by December 2023. The scope of work in this phase includes design, construction, operation, maintenance, emergency activities and communication network, including high pressure gas pipelines and natural gas distribution network. The gas ends up at residential, commercial and industrial customer's appliances in the Emirates, a population of 1.483m. Strong relationships with both EPC Contractors and a proven track record in the region opened an array of doors for the maiden supply and testing of PE

Fittings from the Fusion Group and PE Ball Valves from AVK Syntec.

A breakthrough project for Fusion Group

Staying true to the AVK cornerstones of striving to serve our customers locally, offering a full-line partnership and a single entry point to the AVK world, AVK Watecom and Fusion Group carried out a number of presentations and meetings with ADNOC & PETROJET.

ADNOC's chief requirement was a customised packaged solution, and AVK's recommendation included PE Solutions (PE ball valves & fittings) along with product training and 24/7 on-site local and technical support. The combination of a complete solution, and not solely products, won the deal.

The combined effort of the entire team, our solid know-how and AVK's decades of experience won the project and enabled Fusion Group to be approved in ADNOC and supply in the prestigious Natural Gas Distribution Network project. A factory acceptance test and inspection were successfully carried out for the PE Ball Valves by ADNOC, leaving an everlasting impression on ADNOC engineers of AVK's high quality products and processes.



Products supplied in the ongoing phase 2:

- PE fittings, 32mm-400mm
- PE Ball Valves, 32mm-180mm

AVK'S 24/7 EMERGENCY REPAIR FITTINGS SERVICE LIVE UP TO ITS NAME

Quick and efficient response is crucial in case of an emergency. AVK Syddal's team quickly manufactured emergency flow-stop tees to stem a gas leak.

*By Julia Nixon,
Head of Marketing,
AVK UK*



On a Friday afternoon, AVK Syddal took a call from a customer urgently needing two fabricated tees to handle a gas leak. The rapid response team, who deliver the 24/7 service, worked throughout the entire weekend to ensure the fittings were ready for despatch on Monday morning.

Tailoring the tees is a comprehensive task. As AVK Syddal's Production Manager, Aaron Whitehead, describes;

"Until the customer digs down to the pipe, they rarely know what they are going to encounter. There is a record of all previous work carried out, but occasionally this historic data can be found to be inaccurate. Because of this uncertainty, each emergency fitting is specific to the pipe being repaired. It is effectively 'made to size' and has zero tolerance. It's a skilled job."

In this case, the two tees were 474 mm (outer diameter) with a

DN300 PN16 flanged outlet. The tees were fabricated to the ISO/TS 29001 standard; the strict quality management system applied to the gas and petroleum sectors.

Continuous improvements

AVK Syddal has invested in automated robotic welding which has made the fabrication of both standard and emergency products more efficient. This is continually enhanced by the application of lean manufacturing processes and, in particular, kaizen workshops, with focus on optimising work processes;

"For the emergency tee fabrication, the workshop identified ways in which the process time could be almost halved, and highlighted areas in which the secured capital investment should be targeted, to optimise our processes further", describes Sean Brody, Production Manager.

Local manufacturing

According to UK Sales Director, Gareth Toyer, local manufacturing and fabrication has truly shown to be an advantage during the lockdown periods, which customers have indeed come to value. Particularly in cases where there is a need for rapid response.



40 YEARS FULL OF DEVELOPMENT AT AVK NEDERLAND

THE NETHERLANDS

AVK Nederland BV was founded in 1980 as AVK's first foreign sales company (outside of Denmark) and opened its office and warehouse in Vaassen, the Netherlands.

*By Dana Hoffman,
Marketing Manager,
AVK Nederland*



In 1986, we began supplying gate valves to our southern neighbours in Belgium as well, and AVK Belgium was founded in 1989. The first plastic street cover was produced in this period, and a separate division was established in 1987 under the name "Plastics." AVK Plastics BV was founded from this stadium.

In 1999, AVK Nederland BV took over the shares of Rewag Pipeline Products, manufacturer of stainless-steel repair clamps, which in 2004 became part of the AVK Group under the name changed AVK Rewag. Their location in the Netherlands was primarily used for the production of repair clamps and tapping saddles.

The most recent development is the start-up of a separate industrial company under the name AVK Industrial Nederland BV, which has been established in order to better



respond to the specific product needs of our industrial customers.

AVK Nederland shows good growth each year, and this is partly due to our committed team with many employees with long-term employment. Our current director Hendrik Kwakkel will retire in the spring of 2021 after more than 40 successful years at AVK

Nederland BV. He will be joining the board of directors of AVK Nederland BV / AVK Industrial Nederland BV and support the new general manager and his team for the years to come.

Due to COVID-19, the planned celebrations for employees have been moved to June 2021.

GLENFIELD INVICTA SUPPLIES RESERVOIR VALVES TO WELSH WATER

UNITED KINGDOM



The five-year supply, which will include tailored large diameter valves for their reservoir assets, will strengthen our long-term partnership with Welsh Water.

Glenfield Invicta will be working in collaboration with the engineering teams from Welsh Water and its appointed delivery partners. Contributory factors in winning the contract included our unrivalled 160-years experience in specifying, designing and manufacturing reservoir valves, our ability to provide engineering support and guidance as well as our access to the global engineering resources of the entire AVK Group.



We have already been working closely with Welsh Water on many other reservoir projects, and reservoirs and dams always present challenging

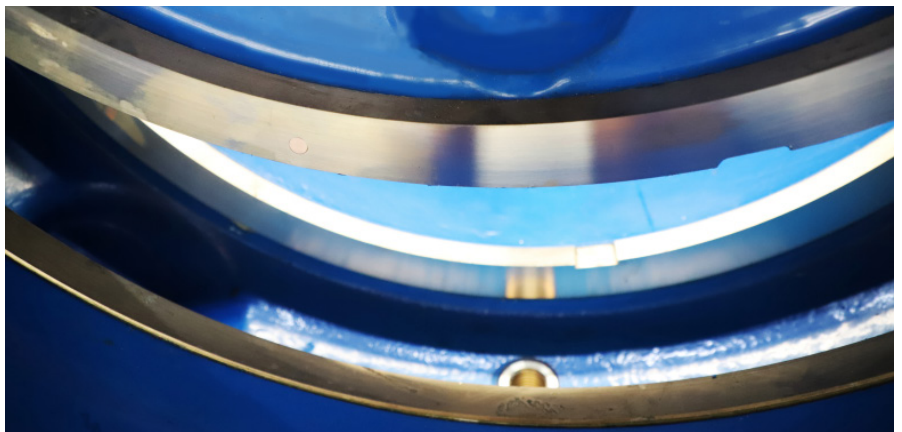
Glenfield Invicta Limited, one of the UK's leading water project solutions providers, has been appointed by Welsh Water as part of their 2020–25 investment programme.

*By Paul Boyden,
Managing Director,
AVK UK*

environments for valves to operate in. Welsh Water's decision to appoint Glenfield Invicta as its main supplier is a recognition of our work to continually develop and expand our family of tailored reservoir-specification valves which deliver optimal functionality in such demanding conditions.

+100 years of service

Welsh Water specified that all valves for the programme must carry a 100-year design life expectancy. We are in the unique position of being able to physically show our customers Glenfield valves that are over 100 years old in situ and still fully operational.



STABLE OPERATION EARNES GOOD REPUTATION AND CUSTOMER LOYALTY

CHINA

AVK's valves have been in constant operation since they were put into use at the old Hefei water plant. Due to their valuable reliability, the new and relocated plant now also includes valves from AVK.

*By Ken Yan,
BD & Marketing Director,
AVK Valves (Shanghai) Co., Ltd.*



The newly built water treatment plant Hefei No. 3, with the capacity of 400,000 m³/day, is currently the largest water plant with one-time construction in the province of Anhui. The project is benchmarking within water supply treatment and won the Hefei Municipal Engineering Quality Award "Luzhou Cup" in 2019.

The plant is located in Wangdunying Village in the Luyang District and covers an area of about 12 hectares. The construction process included a new water purification plant as well as a water transmission and distribution network.

The project effectively alleviates the water supply pressure in the western area of Hefei. After the new water

plant was put into use, the daily water supply capacity of Hefei reached 2.1 million m³/day, which greatly optimised the allocation of water resources, promoted the interconnection of the water supply network, and improved the water supply scale and service guarantee capacity.

20 years of reliable service

The old plant has been using valves from AVK since 2001, which have had stable operation since they were put into use. All of this is inseparable from consistent quality assurance, timely response, and full pre-sale and after-sale support.

Therefore, selected AVK series products were also chosen for the key process sections at the new plant,

including butterfly valve (DN150-2000), resilient seated gate valve (DN100-600), and penstocks (700*700-2000*2000). AVK covers more than 90% of the valves installed in the plant.

Expect long-term partnership

For us, long-term partnerships not only reflect the related transactions, they are also an opportunity to develop and modify our solutions over time, and to innovate for the benefit of our customers.

With more than 50 years of experience in the valve industry, our solutions can stand the test of time.

EXPANDING THE TREATMENT CAPACITY THROUGH WASTEWATER PLANT UPGRADE

PORTUGAL

The Portuguese company Suez Treatment Solutions is remodeling and expanding the treatment capacity of the Peniche wastewater treatment plant. The new plant is scheduled to be completed at the beginning of 2021.

*By Nuno Guerreiro,
Sales Manager in Portugal,
AVK Válvulas, S.A.*



The owner of the project is SMAS de Peniche, the municipal utility responsible for water and wastewater management. The effluent to be treated has a strong industrial component, mainly deriving from the area's industry of canned fish food.

Peniche is a city built on a rocky peninsula on the west side of Portugal, and is very popular in the watersports community for having consistent wind and waves throughout the year. Due to the plant's location near the Atlantic Ocean, the equipment works in a high corrosive environment. Therefore, the most resistant features were selected for each product.

The new plant will have the capacity to treat 800 m³/hour.

AVK valves installed in the project:

- Gate valves, series 06/84, DN65-DN300
- Concentric butterfly valves, series Desponia Plus extra coating, DN65-DN500, assembled with double-acting pneumatic actuators or gearboxes
- Ball check valves, series 53/35, DN80-DN100
- Dismantling joints, series 265/50 with A4 tie-rods, DN100-DN300
- Fabricated flange adaptors, series 260/32 with A4 bolts, DN500
- Supa coupling straight, series 601 A2 bolt/A4 nuts, DN300
- Supa flange adaptors series 603, A2 bolt/A4 nuts, DN100-DN400
- Knife gate valves with extra coating, C5M assembled with electric actuator, gearboxes and handwheel, DN200-DN60



WOUTER WITZEL'S EVS VALVE TO THE RESCUE

SOUTH AFRICA

A valve installation has helped a prominent mining house deal with the continuous failure of butterfly valves that resulted in unwanted downtime at its water reclamation plant.

*By Nicole Singh,
Marketing Manager,
AVK Valves Southern Africa*

When faced with a persistent problem of valve failures at its crucial water reclamation plant, a prominent mining house operating in South Africa sought the expertise of AVK Southern Africa - through one of the valve manufacturing company's local distributors, Maduba Mining Supplies - to provide a lasting solution.

Built in 2016, to process used mine water, the water reclamation plant was consistently plagued by problematic butterfly valves that kept failing and could barely last six months. As explained by the customer, the reason was that the butterfly valves were twisting, and would eventually break off due to scale build-up inside the valve.

Consequently, the valve liners protruded out, thus preventing the valves from closing properly, which in turn caused the actuator to trip over torque. The company needed to have a person on standby just to get the system back online once the actuator had tripped.

Putting our valves to the test

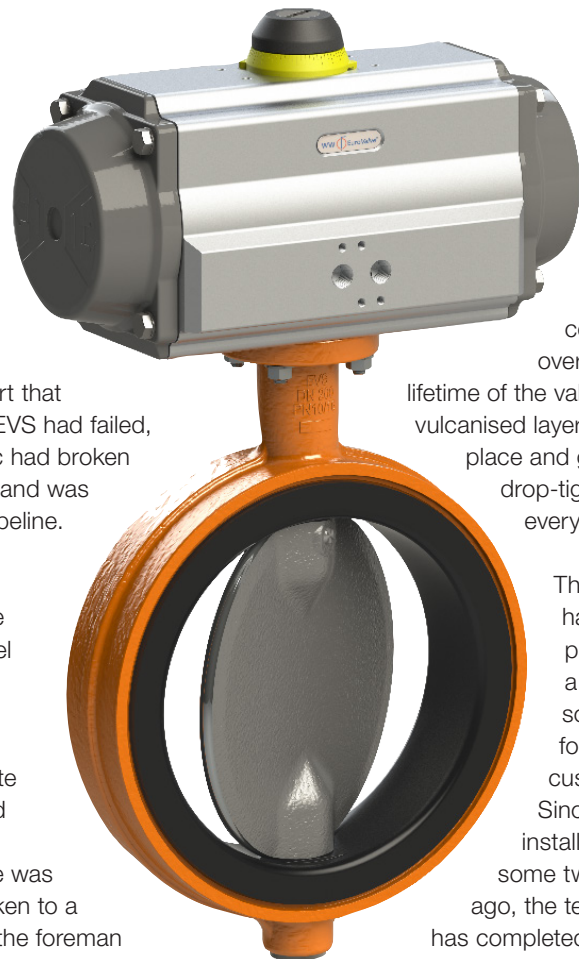
After visiting the site to investigate, AVK Southern Africa's Pieter Swanepoel recommended a Wouter Witzel EVS valve for testing. Having put the valve through its paces for a month, the

plant maintenance foreman called Swanepoel to report that the Wouter Witzel EVS had failed, saying that the disc had broken free from the shaft and was "spinning" in the pipeline.

Based on his experience with the product, Swanepoel was incredulous about the claimed EVS failure and insisted to be on site when they removed the valve from the line. Once the valve was removed, it was taken to a test bench, where the foreman opened and closed it, only to discover that it was functioning properly.

The plant foreman, who was initially convinced that the valve had failed, was astounded as it did not trip even once during the entire testing period. It even ran at a lower torque output than all the other valves on site.

Central to this capability is the fact that the EV valve range (including the EVS) is equipped with a vulcanised liner. The vulcanisation process bonds the rubber onto the body of the valve by means of high temperature and high pressure, eliminating any space between the body and the liner where corrosion or erosion can take place. This keeps the torque low and



constant over the lifetime of the valve. The vulcanised layer stays in place and gives a drop-tight seal every time.

The valve has thus provided a lasting solution for the customer. Since its installation some two years ago, the test valve has completed a whopping 200,000 cycles, and counting.

Not only has the valve lasted four times longer than the previously specified valve, but it also uses a smaller actuator to open and close, thus reducing running costs. The valve opens and closes approximately once every five minutes.

The Wouter Witzel EV range has an impeccable track record and has continuously proven itself, not only in outlasting its competition, but offering significantly lower cost of ownership. Having experienced these benefits first-hand, the mining house is now converting the whole plant for Wouter Witzel butterfly valves.

PREPARING FOR FUTURE NEEDS THROUGH AN UPGRADED WATER INFRASTRUCTURE

NORWAY

By Asgeir Totland,
District manager,
AVK Norge



Two very large, prefabricated concrete manhole chambers were delivered to the Grunnavågen VVA project, where Stord municipality is building a new road. With good logistics and coordination, both chambers came into place on the same day.

In recent years, Stord city's municipal technical facility and its plants has undergone a major development in order to continue progress and upgrading in the years to come. In connection with a new road to the industrial area Grunnavågen, the municipality uses the opportunity to upgrade the infrastructure in the area within water and sewage. They have expanded the main water pipeline to, among other aspects, be prepared for future development of housing and business operations. High on the wish

list is also a more stable water supply for the municipality, as well as the opportunity to run the water in a ring pipeline.

Meeting the customer's needs

In addition to the water and sewage development, space-saving and HSE (health, safety and environment) are important topics. Two prefabricated chambers were chosen as the primary solution to satisfy the needs of the municipality.

For VK1, the largest chamber, three fixed AVK combi crosses were chosen in DN300 together with air valves, dismantling joints and fittings (reduction flanges, flanged pipes and flanged transitions). One combi-cross has a manifold mounted on one of the outlets. This provided the opportunity for water supply through branched pipes to the consumers. Additional shut-off valves were mounted before

Article continues on the next page >

the air valves, so that these can be easily and quickly maintained later. For the smaller chamber, VK2, a similar but downscaled solution was chosen.

Two heavy lifts

The chambers, including all fittings, weighed 43 and 30 tonnes respectively. It required good and detailed planning to get these in place on one and the same day. They were transported by barges, then lifted by a mobile crane and further on with trailers. As a subcontractor to the project, we must honestly admit that we are very impressed with the concrete manhole chamber supplier who made this happen.



AVK KNIFE GATE VALVES FOR PLANT RENOVATION PROJECT

TURKEY

Resilient products and easy maintenance is crucial when working with remote facilities such as the Boyacı natural treatment plant.

*By Ismail Sincik,
Country Manager, Turkey,
AVK International*

Kayseri Water and Wastewater Authority (KASKI) placed a new investment for the Boyacı natural treatment plant to reactivate the plant. Natural treatment is an alternative to mechanical treatment, where the wastewater is treated by physical and chemical processes triggered by the interaction of water, air, soil, and microorganisms. The treatment occurs more gradually, with the same pace as it would in the nature, and works as an ecosystem.

The renovation project included a new PE pipeline and knife gate valves for isolation purposes. AVK's renowned knife gate valves were chosen for the facility based on their improved serviceability over the competition. AVK's series 702 knife gate valves enable replacement of the top sealing without disassembling the valve and therefore reduce maintenance time. This feature is especially important in remote facilities



where discharging the line and maintenance is relatively harder due to a lack of tools and facility.

Products delivered to the project:

- AVK knife gate valves, series 702

CRUCIAL DEVELOPMENT FOR SMART IRRIGATION IN THE ITALIAN MARKET

ITALY

For AC.MO, September 2020 was a crucial milestone as we acquired some very important contracts related to our smart irrigation systems and technologies.

*By Sofia Lavagnolo,
Managing Director,
AC.MO*

The contracts include the supply of nearly 20,000 smart hydrants (Hydropass); all with Lo-RaWan data transmission technology, and many of them with ultrasonic metrology. The supply is to be scheduled throughout the next three years.

Dedicated efforts place our technology in front

Despite many difficulties, our technical and commercial teams worked restlessly even during lockdown periods. Thanks to their commitment, we succeeded in offering the best technology solutions available nowadays, obtaining the maximum technical score and outdoing the competitors' proposals. Our Hydropass system is now placed at the top of the market making it the most used system by irrigation authorities in Italy. The result is an installation of about 70,000 automated hydrants for irrigation.

Optimising resource management

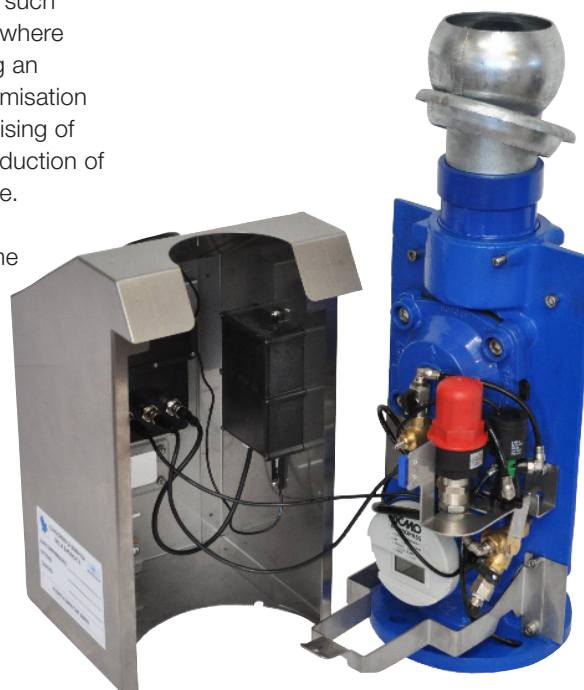
Another, but not secondary, aspect to consider is that thanks

1% of the fresh water on the earth is available as drinking water; of the available water, 70% is used in agricultural food production, 22% is used in industry, and a mere 8% is used by households.

The average waste of food globally is around 30%, which means that 30% of the water used for crops is also wasted. This makes it even more sensible to manage irrigation systems to avoid water loss up-front.

to such projects, the AVK group overwhelmingly enters the Italian irrigation market and most importantly the smart irrigation market. We sincerely wish to replicate such success in other markets where irrigation is or is becoming an important topic in the optimisation of water resources, minimising of non-revenue water and reduction of unnecessary energy usage.

Last but not least, for some of the projects we have proposed ARIESPACE, which is a satellite system interface as well as IRRISAT modality, which has been quoted in the European Union report: "Applying Earth Observation To Support The Detection Of Non-Authorised Water Abstraction".



USING TECHNOLOGY TO FACILITATE FACTORY TOUR BY LIVE BROADCASTING



Offering a factory tour is a great way of building and maintaining partnership, especially regarding complex products and projects. The global situation still encourages us to think in alternatives, which led to our region's first virtual factory tour – and most likely, not the last.

*By Anurima Roy,
Marketing Manager,
AVK Watcom*

While adapting to the new normal following the pandemic, and still



performing social distancing, AVK Gulf and AVK Anhui organised a virtual factory tour and audit for their guests from FEWA, the Federal and Electricity and Water Authority.

During the two-day online programme held in July 2020, our cameras took a tour around the valve factory in Anhui to illustrate our unique manufacturing technologies and concepts for large sized valves concentrating on:

- Valve casting (AVK Advanced Castings)
- Small valve manufacturing
- The machine factory and our own rubber production (AVK Sealing)

The tour enabled the guests to explore our facilities in China as if they were standing on the factory floor, while

being guided and informed from the AVK team.

Besides being the first of its kind, the tour was unique with regards to the audience as well; usually, only the key decision makers from the potential partner or client take the long journey to visit our factory in China, where they can experience the processes behind making our products, and how they go through stringent quality control and testing. This time, almost 50 members joined in, counting people from various departments of the authorities, as there were now no boundaries as to how many could participate or take the time to travel all the way to the factory. The response has been great, and similar initiatives in the future are already requested.

AVK LAUNCH INTELLIGENT INTERACTIVE DISTRIBUTOR LOCATION MAP

UNITED KINGDOM

Find your nearest supplier of AVK products, wherever you are in the UK - easy and quickly.

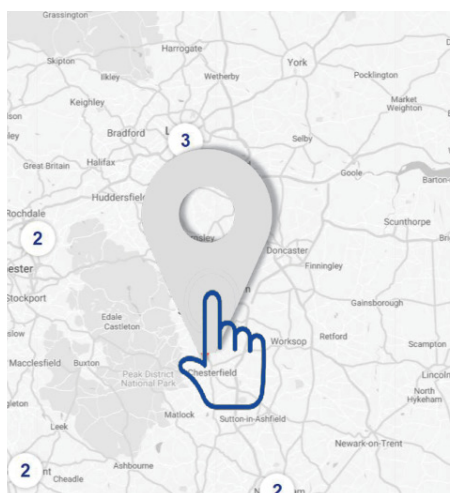
*By Nicola Kirk,
Digital Marketing,
AVK UK*

AVK UK have launched an interactive distributor map. Developed by AVK and hosted on the UK website, the map is available on any device, with no login required. The map is just one element of AVK's programme to make the customer journey as simple and effective as possible.

Simply select the product you require on the drop-down menu or enter the place name or postcode and the map identifies your local stockists of each AVK product range.

Allow your location to be tracked, simply enter the place name or postcode, GPS location, and the map identifies your local stockists of each AVK product range.

The AVK sales and customer service team believe the map will be a major benefit to help customers access the wide range of products that AVK UK manufacture.



On accessing the map, no login is required, and customers simply have to choose a product category, enter their current location by place name or postcode and the map displays the location of AVK distributors within a 40-mile radius. When a customer clicks on a distributor 'pin', they are given the distributor's address and directions via the google map link.

For proactive distributors with AVK product in stock, the map is a really powerful sales tool.

Today's generation of AVK customers have grown up in a digital world. More and more they are using the internet to access product information and place orders. The interactive map is yet another sign of AVK UK's commitment to digital investment.

Gareth Toyer, AVK UK Gas Sales Director, explains:

'AVK UK has been successful in winning a number of utility framework contracts. The next step is to ensure framework contractors, sub-contractors and other parties are able to get the right product, as quickly as possible, wherever their project is located.'

The AVK UK website is already the 'hub' for technical and commercial information. The interactive map acts as the bridge between product knowledge and our distributor network.'

TWO NEW AVK WEBSHOPS

GLOBAL

Globally, and not least during the pandemic, there is an increasing interest for online shopping. This also includes products and solutions from AVK.

*By Frederik Lykke Fonager,
Regional Marketing Manager,
AVK South East Asia*

&

*Stijn Meirlevede,
Sales Manager (Water),
AVK Belgium*

AVK Malaysia

For AVK Malaysia, the main reason for introducing a domestic webshop was to further expand the digital platform on which they meet their potential customers. It creates more flexibility, as online purchases offer the possibility to order whenever it suits them, and it allows customers to view the stock-

availability as well as previous orders for future re-order.

By creating a user profile, readily available products can be purchased at a discount, and via a seamless integration with our systems, existing customers will always get our products with any previously agreed discounts.

AVK Belgium

AVK Belgium performed a customer survey to confirm the need and based on the feedback they found that many of their customers would highly appreciate this additional way of purchasing products. Online purchases are continuously gaining within B2C, and as a B2B player, gaining a foothold in the online market offers a great growth potential for AVK Belgium.



Main benefits for AVK customers:

- Orders can be made 24/7 and current stock levels are visible
- There is no queue. The customer service will not depend on i.e. daily or seasonal peaks
- Better service regarding delivery times and no administrative fee for smaller deliveries

The shops will also include benefits for AVK internally, as there will be less time spent on smaller orderings regarding both stock control and order entries, and there is a possibility of automatic integration with the customers' system.

EXPANDING THE DIGITAL WORLD OF AVK

GLOBAL

*By Lise Rye Brix Østergaard,
Global Digital Coordinator,
AVK Holding A/S*

At AVK, we strive to meet our customers wherever they are, which increasingly means online. Therefore, we are continuously expanding our global website platform as well as considering new ways of catering to different market needs around the world. So far in 2020, 7 companies have jumped on board and we now have 34 integrated websites up and running, with 7 more underway.

As you could read in the previous two stories, our focus is on building a platform that presents solutions to our customers' challenges and making it easy for them to reach out to AVK. The platform is global, but the focus on each website is local in order to support, not only our customers as best as possible, but also our partners and sales organisation. Our joint effort also provides AVK with the opportunity to share knowledge across companies

and countries to provide our customers with the best products and solutions. Last but absolutely not least, the new website makes it easy for customers to select relevant products, find necessary documentations and quickly send an enquiry.

We are looking forward to offering even more features and functionalities to both customers, business partners and internal users in the future.

DESUPERHEATERS AND STEAM MIXING PIPES FOR COMBINED CYCLE POWER PLANT IN LEIPZIG

GERMANY

Desuperheaters – also called steam attemperators - belong to the important control valves within a conventional thermal power plant. They are used to produce a constant steam temperature for the steam turbines by injecting feed water or condensate into the live steam and regulating the steam temperature in the superheater stages of the boiler.



*By Stefan Haftenberger,
General Manager,
TEC Artec*

By selecting high-quality desuperheater valves, the boiler steam temperature can be kept constantly close to the boiler design conditions regardless of load, thus increasing the efficiency of a boiler. In particular, the choice of

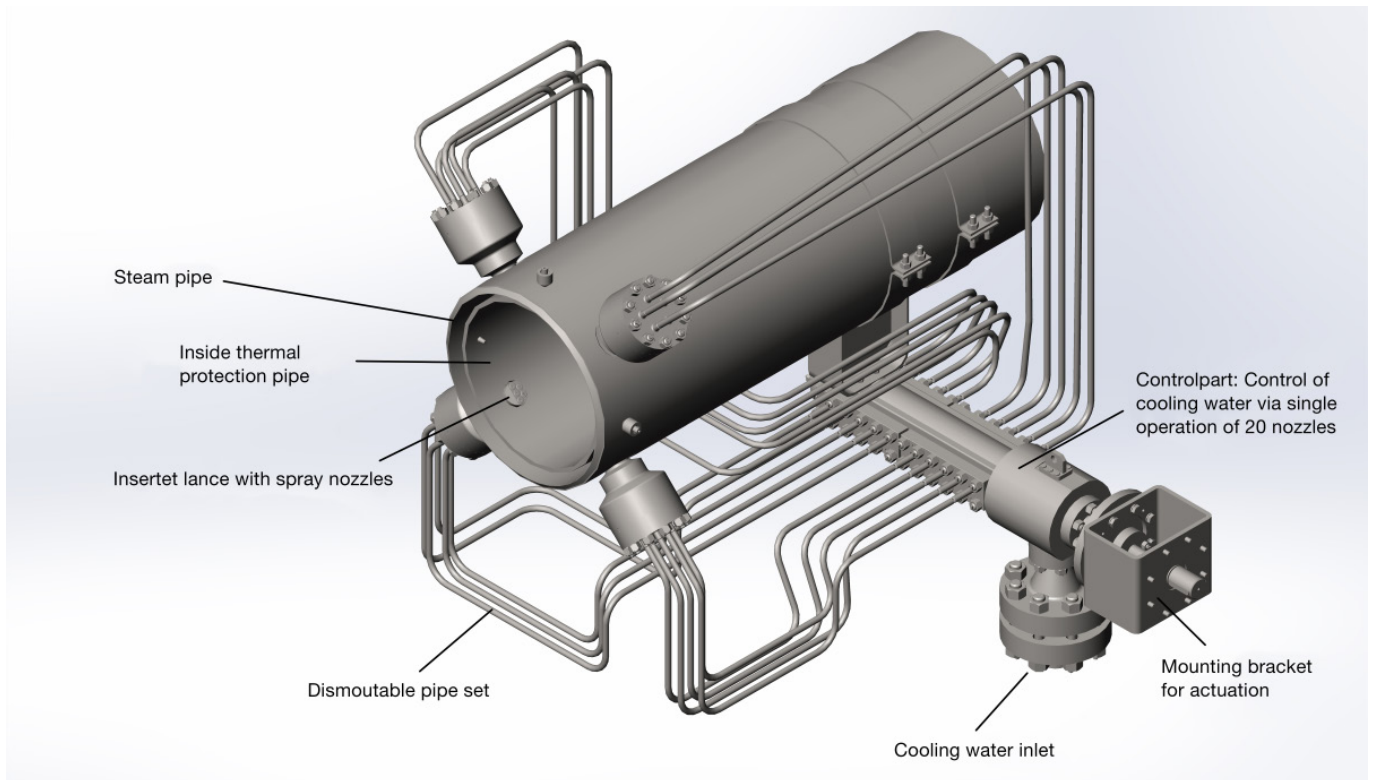
integrated desuperheater valves, which combine the control function and the injection in one valve unit, allow a wide control range while maintaining a constantly high spray quality within all load scenarios with very low evaporation distances.

A traditionally operated power generating station consists of a very large boiler, a steam turbine and a power generator.

Water is boiled in the boiler at a very high temperature which causes a high pressure. The steam that is generated is led to the steam turbine, which propels a power generator. When the steam has left the turbine, most of the pressure is relieved but the steam temperature remains very high. This is referred to as overheated steam which must cool down to exploit the temperature difference for e.g. district heating. A desuperheater is inserted to spray colder water into the steam which then cools down to the point of saturation. Pressure, temperature and evaporation pressure are interrelated which can be read from a steam table.

The quick evaporation of the injected water reduces the risk of damages to the live steam headers and prevents the formation of inhomogeneous temperature profiles in the boiler superheater stages that are mainly caused by inconsistent distribution of unevaporated water.

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Quality products for lasting solutions

Thermo-shock induced damage to steam pipes is caused by the impact of cold water on the hot pipe surface. The stress caused by sudden superficial cooling cannot be compensated by the pipe material anymore. Sooner or later, cracks form at the inner pipe surface. The pipe develops cracks which, with repeated wetting and corresponding alternating loads, quickly enlarge and ultimately lead to the failure of the steam pipe.

Thermo-shock induced cracks and erosion at the steam pipes as a result of unsuitable injections can be reduced or even be completely avoided by the selection of the right injection type. The additional installation of thermo-shock protection sleeve pipes provides permanent protection and safety.

At TEC Artec, situated in Oranienburg near Berlin, Germany, we cover a very wide range of possible applications with our desuperheater valves and systems. Our systems are mainly based on the quarter-turn principle of the stem. In 2019, we were awarded by the local energy supplier of the city Leipzig, Stadtwerke Leipzig, to replace the steam attemperators of two of their steam boilers.

Replacement project in Leipzig

In addition to the delivery and installation of the valves, also a section of the steam pipe should be replaced and exchanged by new steam pipes. The exchange had become necessary since the existing inappropriate desuperheater valves frequently had damaged the live steam pipe by thermo-shock and erosion. Over the past years, the steam pipe had to be replaced several times at economically unacceptable short intervals.

The existing injection should therefore be exchanged for a system that, on the one hand, uses as many nozzles as possible to generate the greatest possible droplet distribution over the steam pipe cross-section. On the other hand, the technical solution should have no moving parts in the steam flow and offer thermo-shock protection suitable for the service life of the power plant.

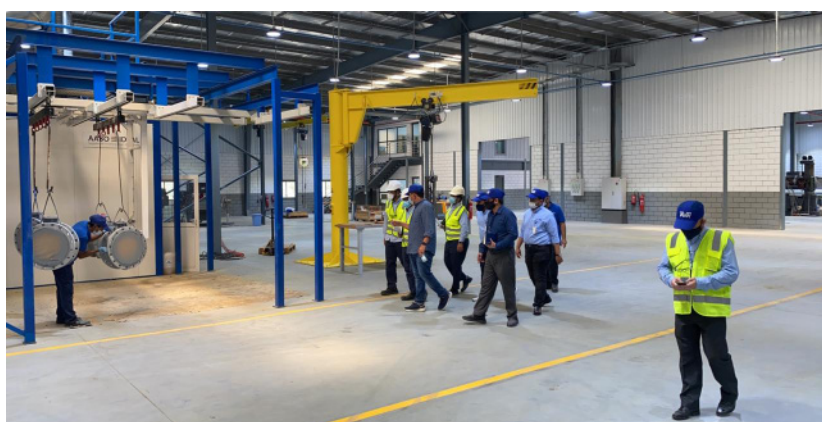
After market research and evaluation of the available technical solutions, the decision was made in favor of TEC Artec's TECtemp HTR-injection system. This patent-protected system has no moving parts in the steam flow, but still offers individual control of the radially arranged nozzles. The sequential nozzle control guarantees consistently high injection quality across all load



scenarios with the finest possible water atomisation, high control quality and short evaporation distances. The thermo-shock protection sleeve pipe integrated in the steam pipe is equipped with spring-loaded spacers. These allow tension-free expansion of the thermo-shock pipe, especially in the event of short-term temperature changes. In this way, both the protective pipe and the steam line which needs to be protected are kept permanently free of tension and thus free of cracks.

DESALINATED SEAWATER TO BOOST SCARCE FRESHWATER RESOURCES

SAUDI ARABIA



*By Muhammet Hamad,
Head of Product Management &
Export,
AVK Saudi Valves Manufacturing*

Challenged by severe freshwater shortage, additional desalination plants are expected to be implemented in the Kingdom of Saudi Arabia, in order for desalinated seawater to boost the natural water resources.

The Saline Water Conversion Corporation (SWCC) is a Saudi government corporation responsible for the desalination of seawater producing and supplying various regions in the Kingdom with desalinated water.

The corporation aims at consolidating the natural water resource in various regions and cities of the Kingdom where there are severe freshwater shortages, through the process of desalination. SWCC is the largest water desalination company in the world, producing more than 1,800 million m³/year (2018), which is almost 20% of all the desalinated water produced in the world.

One of the main strategic goals for the implementation of these plans is to build a number of desalination plants along with support facilities in regions suffering from shortages of fresh water supplies, based on the outcomes of technical feasibility studies.



Visits to our AVK Saudi factories

SWCC is driving a big part of the Kingdom's localisation programme, and their Content Team along with representatives from the Project, Prequalification and Maintenance departments have made two visits to AVK Saudi factories in Jeddah in the process for qualifying AVK Saudi as

Article continues on the next page >

preferred local supplier of valves and hydrants.

During the visit, the representatives went on a tour in our two AVK Saudi factories, where they experienced the processes behind manufacturing local high-quality valves and hydrants, and passed by check-points where every single product is tested before leaving the factory. They were especially glad to see how we have managed our localisation journey by transferring modern technologies of manufacturing valves from AVK companies around the world, though bringing it to Saudi Arabia to be produced by Saudi hands.



We appreciate SWCC's visit, the output was promising for us both and hopefully we will be boosting our localisation journey through future cooperation.

AVK AROUND THE WORLD

HYDRANTS ON A BREAK

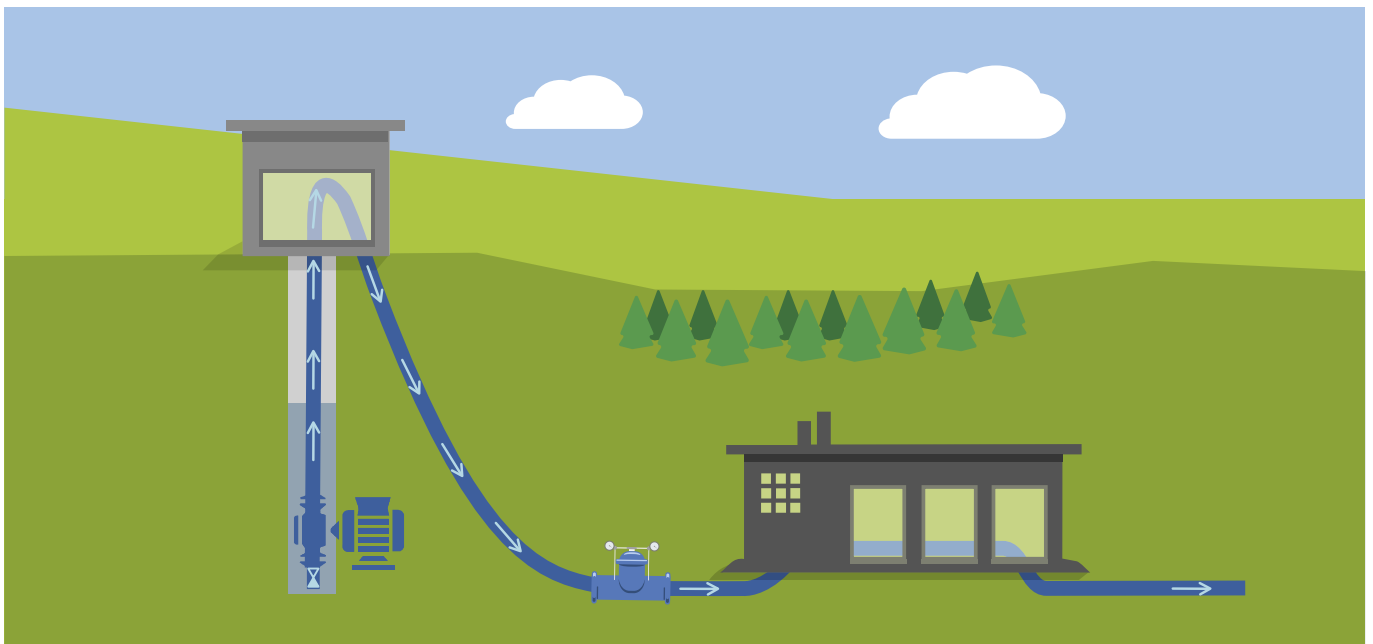
*By Graham Charnley,
Business Development Manager,
AVK UK Ltd.*

I took these when I visited the Lost City of Petra in Jordan. They were outside my hotel, Marriot, and as usual, I cannot even have a break without AVK playing a part in it!



INSIGHTS TO THE BENEFITS OF WORKING WITH CONTROL VALVES

GLOBAL



Positive pressure to avoid pipe damage, contamination and air pockets

*By Martin Børsting,
Product Manager, Control valves,
AVK International A/S*

Positive pressure to avoid pipe damage, contamination and air pockets

Situation:

Groundwater is pumped and supplied downwards to a water treatment plant. In case of pump failure, the pressure drops immediately and due to gravity, the water will flow downwards to the plant. As the gravity pipeline is emptied, there will be a vacuum potentially causing pipe collapse and contamination of the water in the pipe system from the surroundings.

Solution:

A pressure sustaining control valve (PSV) installed close to the pipe entrance at the water plant senses inlet pressure, and if this drops below a specified setpoint due to pump stop, the valve will close drip tight in order to maintain positive pressure in the pipe, thus avoiding the risk of vacuum conditions. When the pump starts and the inlet pressure is again above the setpoint, the valve will open and the water supply to the plant will continue.

Limitation of consumed water from mountain reservoir

Situation:

A factory is supplied with process water from a mountain reservoir. The water is supplied by gravity, and the height difference potentially provides a too high inlet pressure to the factory. Also, it turns out that the factory has a too high consumption of water from the mountain reservoir, and there is a risk of emptying the reservoir.

Solution:

To avoid a too high inlet pressure to the factory, a pressure reducing control valve (PRV) is installed at the factory inlet. To eliminate the risk of emptying the reservoir, the flow from the reservoir to the factory must be restricted. Due to the modular pilot system of the PRV, the valve is easily rebuilt to a multi-function control valve that also includes an application to limit the flow. The combination of the flow limitation and pressure reducing applications meets the requirements of both the mountain reservoir and the factory.

Emergency supply to key customer

Situation:

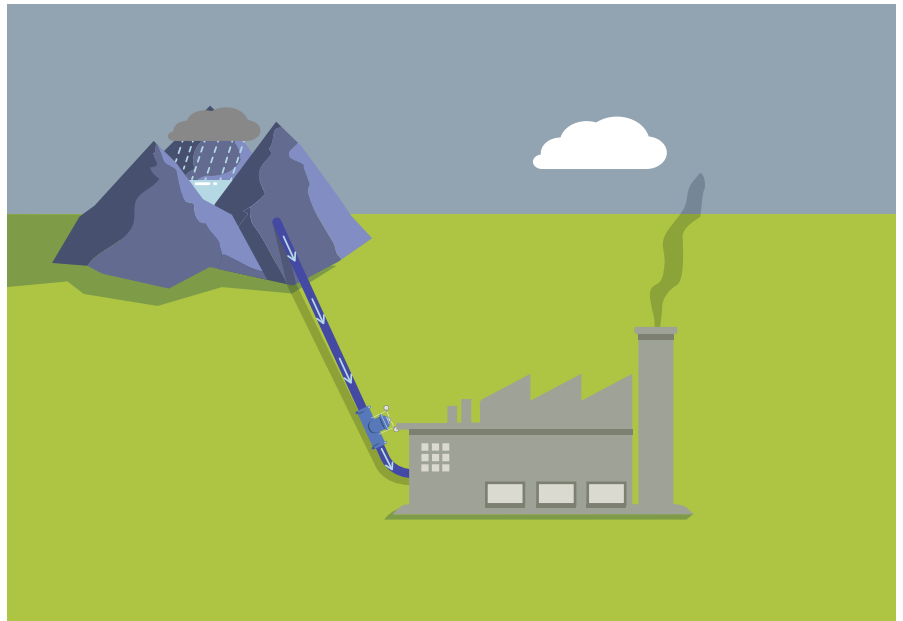
An industry customer with separate water supply needs an emergency supply from the public water supply network. To establish such an emergency supply, the two networks (A and B) were connected.

To separate the flow between the two networks (A and B), the original idea was to install a gate valve with electrical actuator but with no electricity available at the point of installation, this was not possible.

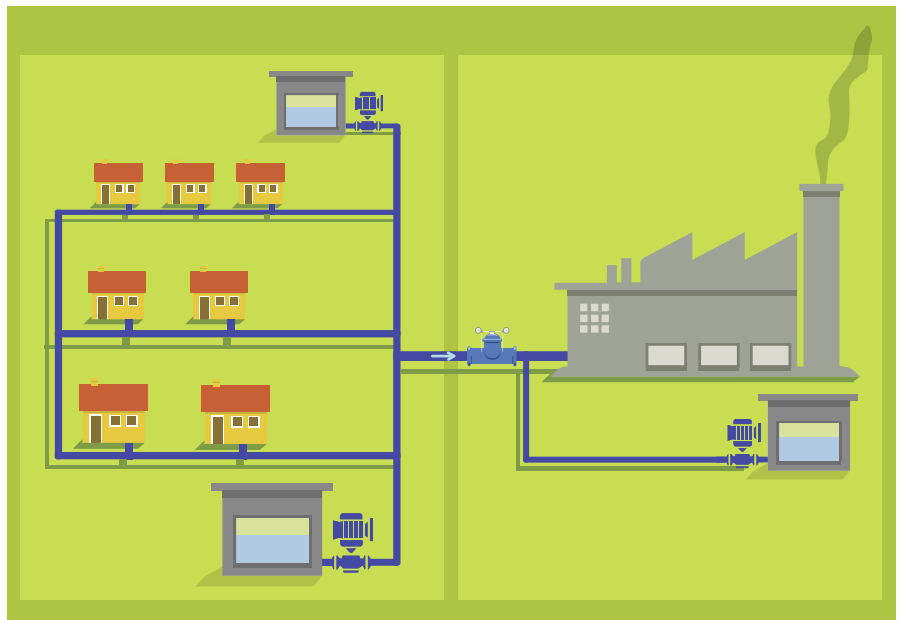
Solution:

Instead, a customised control valve was installed. Due to higher everyday pressure on the outlet of the control valve (B), the control valve is supplied with a built-in check valve to prevent back flow.

By default, the control valve is closed. The valve senses pressure on the outlet side (B), and if pressure drops, due to failure at the industry customer's water supply, the valve will open and allow flow from the public water supply



Limitation of consumed water from mountain reservoir



Emergency supply to key customer

network (A) to the industry customer (B).

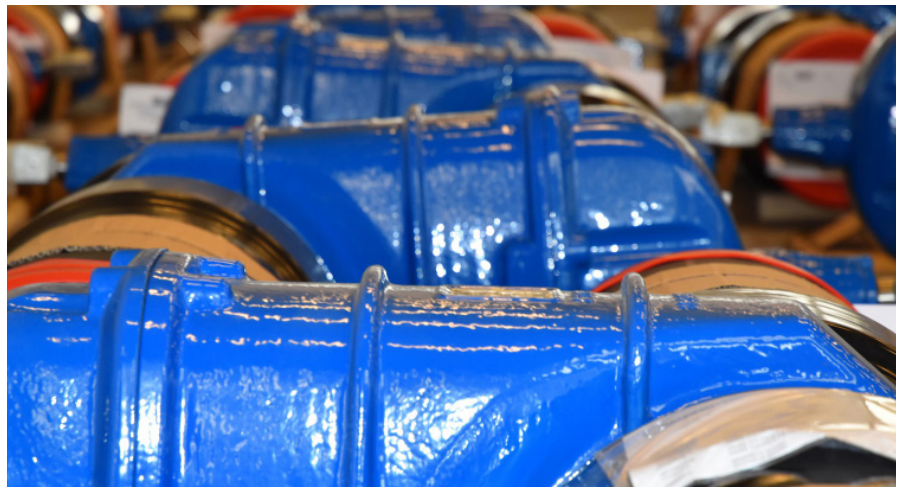
When the industry customer's water supply pressure is reestablished, the valve will close and once again separate the two networks (A and B). This backup function ensures water inflow to the industry customer despite a failure or breakdown at their water supply.

DENMARK AND INDIA ANNOUNCE GREEN STRATEGIC PARTNERSHIP

INDIA

On September 28, the prime ministers of Denmark and India, Mette Frederiksen and Narendra Modi, met for a virtual summit. A promising move for the export of Danish technologies and solutions.

*By Katrine Klejnstrup Sørensen,
Marketing & Communications,
AVK Holding A/S*



At the summit, Denmark and India entered a far-reaching green strategic partnership; an agreement that assures the solutions that India require, and at the same time places Denmark in a unique position in relation to delivering them. The partnership is a crucial milestone in the cooperation, especially within the green area.

The agreement paves the way for increased export and investments, where Danish solutions within i.e. wind power, water technology and energy efficiency are already in great demand in India. The Danish economy is hard hit by the pandemic, even though Denmark is among the countries that appear to be doing best through the first phase of the crisis. One of the government's most important priorities is to restart and rebuild Danish exports, and as explained by Frederiksen;

"I see the agreement as a completely unique way to give Danish export companies new opportunities in a

market where there is a large untapped potential."

India will soon become the world's most populous country. The Indian government wants to increase its renewable energy capacity by more than 300 gigawatts by 2030 - corresponding to more than 40 times the current Danish capacity for renewable energy. Additionally, India faces major challenges in areas such as drinking water and urban planning.

Working together to take bigger steps

The agreement supports our common work towards the UN's sustainable development goals, and helps Denmark reach their ambitions to reduce global CO2 emissions by 2030. Both countries ensure closer multilateral cooperation in priority areas such as green transition, trade and human rights – not just locally, but worldwide;

"It is absolutely crucial for the fight against climate change that a country as large as India chooses to join the work for the green transition. Here, Denmark can contribute with technology and green solutions. The strategic partnership will create more exports and jobs in Denmark and in Danish companies in India." – Mette Frederiksen

An important theme on the summit was Smart Cities, and the benefits of applying smart technology to the infrastructure. Intelligent water management is an important part of the solution to the numerous challenges that India are facing currently.

On the drawing board...

Together with Danish Water Forum and the Indian counterpart, AVK and Grundfos have already agreed on collaboration regarding a 24/7 water supply project in the province of Gujarat, India. We are very excited to follow the progress.

AVK AROUND THE WORLD

NEW HYDRANT INSTALLED AT AVK GUMMI

*By John Koch,
Technical Supporter,
AVK Tech A/S*

In connection with a comprehensive reestablishment and expansion of the parking area at and around AVK Gummi, Skanderborg Vandforsyning has installed a new AVK hydrant series 84 Niro produced by AVK Armaturen in Germany.

The previous hydrant was a series 09, which was the first hydrant series launched by AVK.



AVK AROUND THE WORLD

AVK CONTRIBUTES TO THE GREEN TRANSITION

*By Michael Ramlau-Hansen,
Global Brand Manager,
AVK Holding A/S*

In the Northern part of Jutland, Denmark, you find the village Tranum with a population of less than 500. Until now, the houses of the residents used district heating, driven by natural gas. But as of December this year, they will transition to heat pump, a so-called air-to-water-heat-pump which is to run on excess energy from wind turbines and solar panels. As the share of renewable energy in the Danish power grid increases, the price for green power will decrease. Tranum has seen the light and now transition to a district heating that is 100% sustainable. With the current tank capacity of the district heating plant, they can preserve enough heat for those times when the sun is not shining, and the wind is not blowing.

The project chose AVK butterfly valves mounted with an electric actuator which is to ensure adjustment of the water flow to make sure the ideal heat transfer from air to water.



COMPETITION



We are happy to announce that the winners of the competition in AVK InterLink no. 54 are:

- Ivana Pokorná, CHEVAK Cheb, a.s.
- Simon Jakobsen Petersen, AVK Válvulas do Brasil Ltda.
- Subhash S, AVK Valves India Pvt Ltd

Gifts are on their way.

The correct answer is: it takes 15 minutes to produce raw oil from waste at the AU test facilities in Denmark.

New competition:

How many years of anniversary can AVK celebrate next year, in the spring of 2021?

Send an e-mail with the correct answer in which you state your address and the gift you would like to receive – if you win.

E-mail to: lios@avk.dk

Choose between:



Beach towel with AVK valve



Picnic grill in a cooler bag



Ocean bottle

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